

FLIGHT

The
AIRCRAFT ENGINEER
AND AIRSHIPS

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WEEKLY IN THE
WORLD*

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PRACTICE AND PROGRESS
OF AVIATION

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The King's Cup

THE racing committee of the Royal Aero Club this year adopted at least one of the suggestions which we put forward after the King's Cup Race last year, namely, running the preliminary heats on a previous day, and reserving the Saturday for the semi-finals and final. This did have the effect of allowing the final to be held at a reasonably early hour on the Saturday, and to be held in such a way that the ten machines were seen repeatedly rounding the pylon on Hatfield Aerodrome. This provided a spectacle of some interest, and the interest was increased by the good work of the broadcaster in explaining to the public exactly what was happening. So far, so good.

Having achieved that result, we have to admit that it was disappointing. The final was a spectacle of sorts, but it could not be called a really thrilling one. One could never expect large crowds of Londoners to come out to Hatfield to watch such an event—at least, no one not specially interested in some competitor would ever come to watch it twice. It has been amply proved that, in the opinion of Londoners at any rate, air racing by landplanes is not worth watching unless it is dangerous. If the Royal Aero Club is wise, it will henceforth abandon all attempts to induce a London crowd to come out to watch the King's Cup. Every possible effort has been made, from 1922 to 1934, and the London crowd has shown very unmistakably that it will not come.

The alternatives are (a) a seaplane race, and (b) a landplane race, which caters entirely for the North and disregards London altogether. A seaplane race is at present hardly practicable, though if one could get the entries it would be an easy matter to provide a fine spectacle. There remains the holding of the race in the North. Once the Royal Aero Club went as far afield as Nottingham, and the attendance was gratifying. The idea should have been carried farther. In the early years of the race large crowds always assembled at the aero-

dromes of Birmingham, Glasgow, and the cities of Yorkshire, Lancashire, and Northumberland to see the racers arrive and depart. The idea of long-distance flying seems to appeal to the Northerners. This taste of theirs should be exploited by the Royal Aero Club. The committee may mostly live near London, but they should remember that the club is a Royal club, not a London club. The whole of the United Kingdom is their concern. As we remarked last year, a handicap race cannot do much to improve the breed of aeroplanes, and therefore its chief object must be to interest the public. If the public to which the Royal Aero Club has mostly attempted to appeal declines to be interested, it seems obvious that the venue of the race must be changed, or the race will become rather pointless. H.M. the King originally gave the first cup to do good to British flying in general, and it then gave a tremendous impetus to public interest in the subject. The race can still do good if the intentions of His Majesty are kept in mind, but it would be most unseemly to let the King's Cup Race degenerate into a matter of small importance through lack of enterprise by those who control it.

Though the racing on Friday and Saturday had little popular appeal, the exhibition of modern aircraft was stimulating. The mind went back to the first race in 1922, when hardly a machine which was entered had any real practical value. The field on Friday was a most interesting collection of useful types of the small or medium class, each of which filled, or tried to fill, some definite place in the world of civil aeronautics. In particular, the display given on Saturday afternoon by the fast machines which had failed to get into the final was most impressive. They were all finely shown off, and again the broadcaster did good work in describing their points. It was very notable that all of them were low-wing monoplanes. In 1922 who could have foreseen such a display? If the King's Cup of 1934 did little to advance the airmindedness of the nation, it at least marked the progress made in design in the last thirteen years.

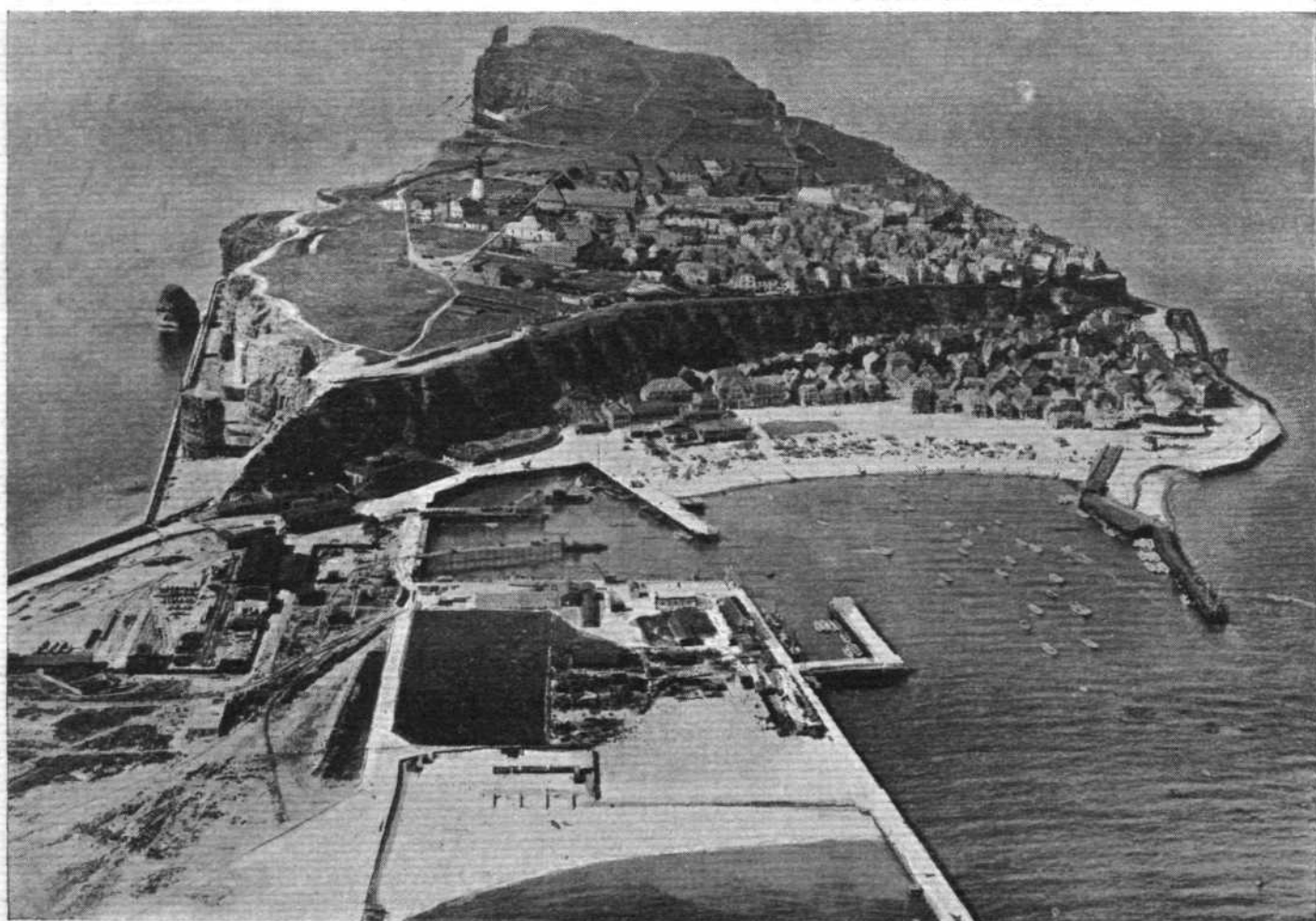
More Squadrons

MR. BALDWIN, acting Prime Minister, is to make a statement before the Parliamentary recess on the Cabinet's plans for increasing our air strength. The daily Press has already decided that this statement will mean an addition of fifty squadrons to our Air Force, and an order for 600 aeroplanes. Speculations are also rife as to the number of new aerodromes which will be required and where they will be located. It is all very interesting, and it is quite probable that some of the guesses will be more or less correct. Some prognostications are quite amusing, such as the prophecy that the new defence aerodromes will be situated near the coast. Presumably someone remembers that when it was first decided to have interceptor squadrons the three fighter squadrons on the coast aerodromes of Hawkinge and Tangmere were chosen to fill the new role. It is probably true that in the beginning the war experts at the Air Ministry believed that if you placed your interceptors at the coast they would catch the raiders before the latter had penetrated inland. If so, they soon had to change their opinion. The very next Air Exercises proved that the squadrons of "Harts" could go over the heads of the coast aerodromes and be far inland before the "Furies" could take off. Interceptors, as well as other fighters, must be stationed some distance inland if they are to have any chance of catching the raiders.

Apart from the accuracy or otherwise of the details, the Government has left no doubt in the minds of the people that a considerable increase in the strength of the Royal Air Force has been decided upon, and it is

also very clear that the public feels very strongly on the subject, and will be extremely indignant if the increase which it is expected will be announced is not a very substantial one. There is no panic, but people of all descriptions, not merely the ultra-airminded ones, are talking daily of the great need to increase our air defences. There has been nothing quite like this since the "We want eight and we won't wait" agitation some years before the war when the Navy had been neglected.

While all may regret the necessity for spending more money on armaments at a time when prosperity is returning but cannot yet be said to have returned, it is nevertheless pleasing to think of the amount of employment which will be provided in preparing new aerodromes and buildings, barracks, etc. Not the least gratifying aspect of the matter is the certainty of very acceptable orders for our aircraft industry, which has been going through a lean time of late years. It has been pathetic to hear of brilliant drawing office staffs being reduced and skilled craftsmen dismissed. The aircraft industry is necessary to the country both in peace and in war, and in the future our national prosperity will doubtless depend on the healthy state of that industry to a far greater extent than it does now. The paucity of orders in recent years has prevented the industry from growing as we should like to see it grow, and there are all too few aircraft firms in the country for real safety. In particular, there are too few individual manufacturers of aero engines. In the great war we had to rely at first on the supplies of French engines, and we do not wish to find ourselves in a similar predicament again. We should very much like to see that side of the industry established on a broader basis.



HELGOLAND : An aerial view of the interesting North Sea island of Heligoland—once a part of the British Empire !

The Outlook

A Running Commentary on Air Topics

Handicapping

EVERY year the most-discussed subject at King's Cup time is the one of handicapping. Formulae have been tried, but whatever is suggested it always comes back to letting Capt. Dancy and Mr. Rowarth estimate the speeds from their vast store of knowledge and experience. Critics, however, always point out that someone runs away with the race and makes the handicapping look silly. If those critics were themselves in the machine which achieved this success, they would not complain; but before singing so loudly they might take the trouble to look a little more deeply into the results. They will then realise that, taking all things into consideration—the distance, the varied weather conditions, and many other unknowns—it is little short of marvellous that the finishes are as close as they are. The subject is not one to argue about heatedly. It ought to be discussed quietly—as no doubt it is—and after that has been done it will still be very difficult to find any other scheme which will work half as well. The only reasonable suggestion we have heard—one made by Capt. de Havilland—is that the allocation of handicap speeds might be left to a committee of five disinterested authorities who know a lot about aircraft but are not connected with the machines in the race.

Heats Are Unfair

ONE point which this year's race brought out was the inherent unfairness of the heat system in air racing. The heats which started in the morning were favoured by the Committee, because the start was delayed on account of bad weather; but those who started in the afternoon had no such favour, and were sent off with rapidly deteriorating weather conditions. The result was that, while everyone got back in the first two heats, only a small percentage did so in the last two. If this system is adhered to, then, to make it fair for everyone the allotted times of the heats should be kept to whatever the weather does.

An Alternative

WHY have heats at all? What good do they do? If it is the necessity for weeding out the entry, then why not run off the whole entry on, say, a 500-mile course, round Great Britain on the Friday, and take the first sixteen or so to get home to compete over a short course in view of a North-country aerodrome—for a change—on the Saturday. This would give everyone the same chance as regards weather, and give greater scope to those who can win races by virtue of their knowledge of how to use the wind, especially the upper winds, over long distances. In any case, whatever is done, Friday should not be looked upon as a spectacle for the public.

Engine Reliability

WHEN we read about motor car races we cannot help feeling that motor car engines have a very long way to go before they are anything like as reliable as are our aero engines. The King's Cup race brought this out very forcibly. Over a course of nearly eight hundred miles a large number of engines were run at full throttle, yet there was no case of failure. There were three makes of engine which had never raced before, but, as the official type test is much more severe, we are not surprised that they came through successfully.

Isle of Wight Racing

MOST people were very disappointed that none of the fast aeroplanes, especially the single-seaters built primarily for racing, were in the Semi-Final and Final at Hatfield last Saturday. They will, however, have an opportunity of seeing several of these same machines next Saturday, as some of them have been entered for the "Round the Isle of Wight" Race. This starts from, and finishes at, Portsmouth Airport. There are actually two races. The first is round the Island and then to a short course near the airport, over which three laps will have to be flown. For this race the first "A" licensed pilot home gets the Peters Trophy, and the first "B" licensed pilot home the Duckham Trophy. This race starts at 2.30 p.m. Later on during the afternoon, at about 5.30 p.m., there is another race consisting of a number of laps of the same short course as was used before, for the Portsmouth Trophy, the first, second and third receiving, in addition, monetary prizes.

Amphibians Wanted

HOW it is that there are not more amphibians available? Nearly every visitor who comes to this office from abroad always says that amphibian aircraft are what they want where he comes from. There are so many parts of the world where there is plenty of inland water with occasional land aerodromes. Those are the sort of places where aerial travel would be easy if the aircraft could land on either, but almost impossible if it were confined to one medium. China, for example, has areas where there are literally thousands of lakes near towns and villages where petrol can be obtained and which people want to visit; from that country alone there would be a large demand for the right kind of amphibian.

The Baghdad Bottle Neck

COMPETITORS in the speed section of the England-Melbourne Race are going to be in difficulty—to put it but mildly—unless the fuel and oil companies show very great organising powers at the five stops between England and Melbourne. Every minute spent on the ground between the start and finish lessens their chances of winning the race, so it is easy to visualise the state of every pilot's mind when he lands at each of those five compulsory stops. Fuel and oil companies will be morally bound to provide separate dumps and full service for each entry using their supplies, and the employees servicing those machines are going to come in for a tough time unless it is obvious that they are doing their job faster than it is being done on other machines. Baghdad is going to be pretty hectic. There is no reason to suppose that many of the entries will not be arriving within a very short time of each other, and the control on the aerodrome, let alone servicing the machines, is not going to be child's play. No doubt the companies concerned have not overlooked this point, but they will have to work fast if they are going to have full supplies, fuel and oil dumps, high-speed delivery pumps, weather information, food, geographical information, and the hundred and one other things which they will have to attend to for the pilots they are looking after, ready in time at every stop. The outfit for getting anything up to 600 gallons of fuel into a machine in the shortest space of time is a large item, but it is unlikely that any fuel company who does not provide this for each of his entries will get many competitors to supply.

THE KING'S CUP RACE



THE LAST ROUND-UP : Machines lined up for the start of the Final. (Flight Photo.)

WITH the ceiling down to six or eight hundred feet, and with general visibility such that the wireless masts towards St. Albans were only just in view, it seemed that a third handicapper had stepped in for Friday's eliminating rounds. After weeks of perfect weather, the Air Ministry prophesied even worse things later in the day.

At eight o'clock, when the first man was due to start, reports were still awaited, and the officials were in conclave; while the pilots stood about and engines were run up in a desultory manner. At nine o'clock Selby-Lowndes was out again "looking at things." Apparently conditions were genuinely embarrassing over the higher ground, with clouds sitting solidly on the hill-tops. Bad for everybody, but definitely dangerous for the really fast men.

Then, quite suddenly, at nine-twenty-five, Number One's engine was started and Mr. George Reynolds prepared his little red flag. Five minutes later the first heat had started, and the weather seemed to be clearing ever so slightly. Interest centred on the first of the low-wing cantilevers in the race—the faired-in Comper "Mouse" with its diminutive cream and blue wings—and at 10 o'clock, after a long run, it was off and the wheels "wound in" almost immediately. Cook's Gipsy Swift was a trifle heart-stopping as the machine reached a slight hollow on the aerodrome just as it was air-borne.

Winner: Flt. Lt. H. M. Schofield, on Monospar "S.T.10" (Two Pobjoy 90 h.p. "Niagara"). Speed 134.16 m.p.h.

Second: Mr. Thomas Rose, on Miles "Hawk" (120 h.p. "Gipsy III"). Speed 147.78 m.p.h.

Third, and Winner of Siddeley Trophy: Mr. L. Lipton on D.H. "Moth" (120 h.p. "Gipsy III"). Speed 124.18 m.p.h.

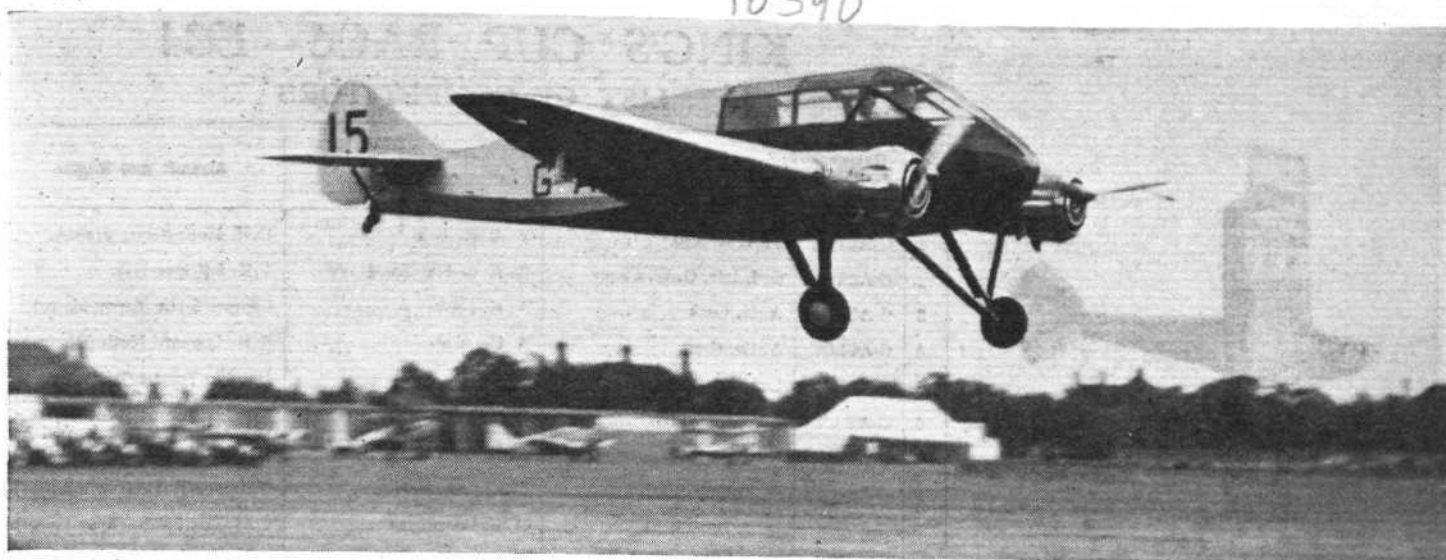
But there was real excitement as the third heat was being flagged away. Not only was the first heat due in and Prince George's Mew Gull ready on the line, but the heavens burst and those unwise spectators without overcoats heartily abjured the low wing tendency. Who could shelter beneath the wings of the Comper "Streak"? Even the "Gulls" made uncomfortable protection.

However, cloudburst or no cloudburst, the Mew Gull bounced across the aerodrome from scratch with spray streaming from its "shorts and spats," as one spectator so aptly termed them. Nobody envied Percival, and few imagined that in such appalling conditions he could average more than the 200 m.p.h. necessary to catch Flt.-Lt. David's Blackburn Trainer.

W. H. Sutcliffe had averaged 139 m.p.h. to win the first heat in Lord Nuffield's Tomtit (Wolseley A.R.9), with G. E. Lowdell (Tomtit) and G. R. de Havilland ("T.K.") fighting it out for second place, and with Cook's "Gipsy Swift" fourth. The latter had averaged 163 m.p.h.! But where was the third of Lord Nuffield's entries? Aga had been reported as down near Reading with petrol shortage—it transpired that the trouble was due to "stoppage" rather than to shortage, and that Aga had put down in a field and damaged his "Moth" against a tree while dodging cows. Presently Number Six drifted slowly over the line at half throttle. Wing-Comdr. Woodhouse had



WAITING FOR SOMETHING TO TURN UP : Many of the spectators saw the race from their cars. (Flight Photo.)



THE WINNER: Flt. Lt. Schofield crossing the finishing line in his Monospar "S.T.10" (two Pobjoy 90 h.p. "Niagara" engines) after covering the course of the Final at more than 135 m.p.h. (Flight Photo.)

suffered a trouble that might easily have been more serious. Near the second turning point, at Whitchurch, when he was at sixty feet, the operating rod of the port aileron had come adrift. Pulling the "Tomtit" up to gain altitude before "baling out," he found that, after all, with careful rudder work, the machine could still be flown fairly comfortably at about 80 m.p.h.—and here he was! Sir Charles Rose was reported as having forced-landed at Northolt with ignition trouble, so the Gipsy Six Miles Hawk was out of the third heat. Later it was found that the trouble was probably due to water getting in.

As expected, Flt. Lt. Schofield's Monospar "S.T.10" simply walked away with heat two, winning at 136 m.p.h., with Edwards' Martlet and Broadbent's Fox Moth close together in second and third places, and with Sir Derwent Hall Caine's Leopard also qualifying for the second round. Hordern's British Klemm Swallow had already been withdrawn owing to a "slow" propeller.

Although he averaged 191 m.p.h., Percival could do no better than fifth in the third heat, which was won by Flt. Lt. Wilson's antique Desoutter at the amazing speed of 116 m.p.h. This was the machine with which Ayre did so well last year. As some humorist querulously remarked, "racing appears to impede the brood rather than



THE REWARD: The winning pilot receiving the 1934 King's Cup from the Secretary of State for Air, Lord Londonderry. (Flight Photo.)

improve the breed"—but a handicap is a handicap, and if an age-old Desoutter can be made to do 116 m.p.h. there is nothing more to be said.

The sun had been doing its best to shine through, but the wind was getting up and competitors reported the most appalling things at various parts of the course, so that the averages put up were really extraordinarily good. In heat four, Flt.-Lt. Leech managed 160 m.p.h. in the Gipsy Six "Gull," but again could do no better than fifth. Peter de Havilland, on a "Tiger Moth," won it at 118 m.p.h. A. L. T. Naish's Hendy "Hobo's" speed may have appeared to be low, but actually matters of airworthiness had made it necessary for Naish to fly with only fourteen gallons of fuel and he landed at Reading for more. So his performance was, in fact, particularly creditable.

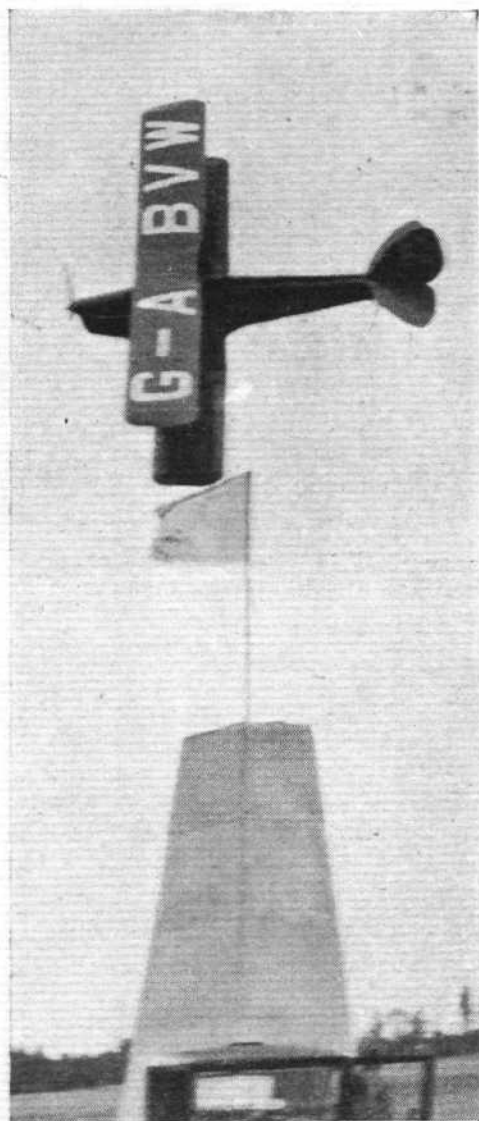
Presently it began to rain again as the first heat of the second round lined up, with the last two heats of Round One still to come in. The Hendy "Heck" was a non-



PLEASED: Flt. Lt. H. M. Schofield carried as passenger throughout the race Mr. H. J. Stieger, the designer of the machine and the inventor of the Monospar system of wing construction. (Flight Photo.)

KING'S CUP RACE—1934

LIST OF COMPETITORS



GOOD CORNERING: Mr. L. Lipton, on his "Gipsy III-Moth," was third in the King's Cup Race and winner of the Siddeley Trophy. (Flight Photo.)

starter, so Flt. Lt. Comper's "Streak" was the second fastest in the race, and he just managed to annex fourth place in his heat, at 175 m.p.h.

If the weather was bad on the Whitchurch circuit, it was definitely "impossible" on the Waddington triangle, with full-blown thunderstorms. Near Peterborough pilots were flying into a black wall, and hail was tearing up propellers and leading edges. V. G. Parker's "Leopard" was the first to be reported out at Wittering owing to weather. Others soon followed.

Then Wilson's Desoutter drifted in before time; a tappet had unscrewed. Lowdell, too, had the worst piece of luck. Within two miles of Hatfield the vent pipe had choked, perhaps with water, and the resultant petrol stoppage meant that Lord Nuffield's second Wolseley "Tomtit" had to be put down in a field behind the wireless masts.

But Sutcliffe pulled off the first heat at 120 m.p.h., so there was still hope that the remaining "Tomtit" might win the King's Cup. Sir Derwent Hall-Caine's "Leopard," flown by T. W. Morten, managed second place at 142 m.p.h.

Schofield's Monospar was "expected" in the second

heat, but Edward's "Martlet" arrived home first at the distinctly amazing speed of 120 m.p.h., and the Monospar only just beat Cook's "Gipsy Swift" into fourth place and the semi-final. Schofield had lost nearly twenty minutes in the appalling weather near Waddington, and came in eventually from an entirely wrong direction.

The hail brought both Peter de Havilland ("Tiger Moth") and Broad ("Dragon Six") back before their time, and an examination of propellers and leading edges showed that their reasons for dropping out were more than good. The fabric on the top wing of the "Dragon" was positively flapping. Peter de Havilland actually found it necessary to land. Mrs. G. Patterson, who was thought,

Racing No.	Registration Letters	Entrant	Pilot	Aircraft and Engine
1	G-ACPH	T. A. K. Aga	T. A. K. Aga	D.H. Moth (Gipsy Major).
2	G-ACTK	Sqd. Ldr. O. W. Clapp ...	G. R. de Havilland ...	T.K. 1 (Gipsy III).
3	G-ABWW	A. H. Cook	A. H. Cook	Comper Swift (Gipsy Major).
4	G-ACLO	A. Henshaw	A. Henshaw	D.H. Leopard Moth (Gipsy Major).
5	G-AASI	Lord Nuffield	W. H. Sutcliffe	Hawker Tomtit (Wolseley A.R.9, Mark I A).
6	G-ABAX	Lord Nuffield	Wing Com. J. W. Woodhouse	Hawker Tomtit (Wolseley A.R.9, Mark I A).
7	G-ABOD	Lord Nuffield	G. E. Lowdell	Hawker Tomtit (Wolseley A.R.9, Mark II A).
8	G-ACME	Sir Norman J. Watson, Bart.	Flt. Lt. E. A. Healey ...	Comper Kite (Pobjoy Niagara).
9	G-ACSW	H. F. Broadbent	H. F. Broadbent	D.H. Fox Moth (Gipsy Major).
10	G-ACHC	Sir Derwent Hall-Caine ...	T. W. Morten	D.H. Leopard Moth (Gipsy Major).
11	G-ACOO	F. J. A. Cameron	F/O. J. Beaumont	D.H. Leopard Moth (Gipsy Major).
12	G-AAVZ	H. R. A. Edwards	H. R. A. Edwards	Southern Martlet (Gipsy I).
13	G-ABVP	A. C. M. Jackaman	A. C. M. Jackaman	Monospar S.T.4 (2 Pobjoy R).
15	G-ACTS	W. S. Stephenson	Flt. Lt. H. M. Schofield ...	Monospar S.T.10 (2 Pobjoy Niagara).
16	G-ACPK	E. Hicks	V. G. Parker	D.H. Leopard Moth (Gipsy Major).
17	G-ACAH	Mrs. Wise Parker	Flt. Lt. H. M. David	Blackburn B2 Trainer (Hermes IV A).
18	G-ACML	Flt. Lt. R. P. P. Pope ...	Flt. Lt. R. P. P. Pope ...	Comper Swift (Pobjoy R).
19	G-ACND	H.R.H. Prince George ...	E. W. Percival	Percival Mew Gull (Gipsy Six).
20	G-ACTE	Sir Charles Rose	Sir Charles Rose	Miles Hawk M2 (Gipsy Six).
21	G-AAPZ	W. S. Stephenson	Flt. Lt. J. B. Wilson	Desoutter Mark I (Hermes II).
22	G-ACIX	Sir Norman J. Watson, Bart.	E. H. Newman	Comper Mouse (Gipsy Major).
23	G-ACJA	Capt. G. de Havilland ...	Peter J. de Havilland ...	D.H. Tiger Moth (Gipsy Major).
24	G-ABLS	E. L. Gandar Dower ...	O. Cathcart Jones	D.H. Puss Moth (Gipsy III).
26	G-ACGR	Sir John Kirwan	J. D. Kirwan	Percival Gull (Napier Javelin).
27	G-AAIG	Maj. F. S. Moller	A. L. T. Naish	Hendy Hobo (Pobjoy Cataract).
28	G-ACKN	W. R. Porter	S. W. Sparkes	D.H. Leopard Moth (Gipsy Major).
29	G-ACUP	Miss Diana Mary Williams	Flt. Lt. H. H. Leech	Percival Gull (Gipsy Six).
30	G-ACTA	Capt. G. de Havilland ...	G. de Havilland	D.H. Hornet Moth (Gipsy Major).
31	G-ACIC	C. E. Gardner	C. E. Gardner	Monospar S.T.6. (2 Pobjoy Niagara).
32	G-AAZE	Miss E. M. Jackaman ...	D. Shields	D.H. Moth (Gipsy II).
33	G-ACPA	Lt. Com. E. W. B. Leake, R.N.	Capt. W. L. Hope	Percival Gull (Gipsy Six).
34	G-ABVW	L. Lipton	L. Lipton	D.H. Moth (Gipsy III).
35	G-ABZZ	S. P. Symington	S. P. Symington	Comper Swift (Pobjoy R).
36	G-ACNC	Viscountess Wakefield of Hythe	Flt. Lt. N. Comper	Comper Streak (Gipsy Major).
37	G-ACNZ	AVM. A. E. Borton	AVM. A. E. Borton	Airspeed Courier (Napier Rapier).
38	G-ACHU	R. G. Cazalet	R. G. Cazalet	Monospar S.T.4 (2 Pobjoy R).
39	G-ACPU	E. L. Gandar Dower ...	A. C. S. Irwin	British Klemm Eagle (Gipsy Six).
40	G-AAVT	C. S. Napier	C. S. Napier	Hendy 302 (Hermes IV).
41	G-ACIZ	A. L. Patterson	Mrs. G. Patterson	Miles Hawk (Cirrus III A).
42	G-ACTD	Capt. G. R. D. Shaw ...	T. Rose	Miles Hawk (Gipsy III).
43	G-ACPM	Viscount Wakefield of Hythe	Capt. H. S. Broad	D.H. Dragon Six (2 Gipsy Six).

ROUND I: FRIDAY, JULY 13th

For full information about competitors, see Table on p. 730.

Racing No.	Pilot	Handicap Allowance	Actual Flying Time	Speed	Place
		min. sec.	hr. min. sec.	m.p.h.	
HEAT 1.					
1	Aga	57 04	Landed Rejected		—
2	G. R. de Havilland...	47 29	1 52 42	123.75	3
7	Lowdell	40 06	1 45 17	132.5	2
5	Sutcliffe	36 44	1 40 20	139	1
6	Woodhouse	36 44	Returned to Hatfield		—
4	Henshaw	33 35	1 41 19	137.75	5
8	Healey	24 30	1 37 16	143.5	6
3	Cook	19 06	1 25 15	163.5	4
HEAT 2.					
14	Hordern	57 04	Non-starter		—
12	Edwards	51 33	1 56 03	120.25	2
9	Broadbent	49 29	1 54 30	121.5	3
13	Jackaman	47 29	1 58 19	118	6
15	Schofield	45 32	1 42 11	136.5	1
11	Beaumont	33 58	1 43 45	134.5	5
10	Morten	33 12	1 38 35	141.5	4
HEAT 3.					
17	David	57 04	2 03 47	112.75	2
21	Wilson	55 56	1 59 35	116.75	1
18	Pope	41 51	1 50 26	126.5	3
16	Parker	33 58	1 46 32	131	4
22	Newman	29 54	1 45 03	132.75	6
20	C. Rose	12 19	Landed Northolt		—
19	Percival	Scratch	1 13 07	191	5
HEAT 4.					
23	P. de Havilland ...	55 56	1 58 14	118	1
27	Naish... ..	48 28	1 59 53	116.5	6
24	Cathcart Jones ...	43 40	1 50 46	126	2
28	Sparkes	33 58	1 41 58	136.75	3
26	Kirwan	23 15	1 32 59	150	4
29	Leech	16 22	1 27 22	159.75	5
25	Ferguson	7 45	Non-starter		—
HEAT 5.					
32	Shields	57 04	Landed Rejected		—
34	Lipton	48 28	1 51 53	124.75	1
35	Symington	46 30	1 55 25	121	3
31	Gardner	38 23	1 46 48	130.75	2
30	G. de Havilland ...	30 37	1 49 47	127	6
33	Hope	15 50	1 30 04	155	5
36	Comper	7 45	1 19 31	175.5	4
HEAT 6.					
41	Mrs. Patterson ...	55 56	1 59 19	117	1
38	Cazalet	40 06	1 52 54	123.5	6
40	Napier	39 14	1 44 24	133.5	3
42	T. Rose	32 04	1 36 48	144	2
39	Irwin	18 32	1 31 08	153	5
43	Broad	17 26	1 28 17	158	4
37	Borton	9 58	1 24 03	166	7

with her standard "Hawk," to stand a fairly good chance, was forced down, too, at Peterborough. So things were really bad.

But C. E. Gardner's (Monospar "S.T.6") got through at an average of 134 m.p.h., with L. Lipton's "Gipsy Moth" second, and Cathcart Jones' "Puss Moth" third.

Meanwhile, both Flt. Lt. Comper and C. S. Napier were reported as down at Wittering, and just as one began to wonder whether anyone would get through, Sparkes' "Leopard" shot through the muck, stall turned, and landed—the winner of the last heat at 132 m.p.h.—with Symington's "Pobjoy Swift" second at 116 m.p.h. This last was a particularly good show; his little machine must have been more than a handful in the thunder bumps, heavy rain and hail.

By this time there was a really nasty black sky over the Hatfield district, the whole storm coming up more or less against the wind, and one got some idea of what the pilots in the second round had had to contend with. J. D. Kirwan's "Gull" was reported down at Barnwell, 15 miles S.W. of Peterborough.

The crowd waited—in their cars, in the club house, or in the bar—and wondered whether the last man, "Tommy" Rose, would get his Gipsy III "Hawk" through it. Sure enough, his machine, a yellow dot against a lowering sky, came in just when hope was being lost. A hundred and six miles an hour, weather and all!

Semi-final and Final

AS a result of Friday's eliminating races, fourteen machines passed into the semi-final on Saturday. Originally it had been intended to start the first heat of the semi-final at 1.30 p.m., but it was decided to advance the start by half an hour in order to leave time between the semi-final and the final for a demonstration of the rather large number of fast machines which had, unfortunately, been eliminated from the race in Friday's events. The seven competitors flying in the first heat of the semi-final were, in the order of starting: No. 17, the Blackburn B2, piloted by Flt. Lt. David; No. 9, Fox Moth, flown by Mr. Broadbent, No. 35, Comper "Swift," piloted by Mr. Symington; No. 15, the Monospar S.T.10, on which Flt. Lt. Schofield had surprised everyone the day before by flying the first course at an average speed of 136½ m.p.h.; No. 24, Mr. Gandar Dower's "Puss Moth," flown by Mr. Cathcart Jones; No. 31, the S.T.6 with retractable undercarriage, piloted by Mr. Gardner; and, finally, No. 5, Lord Nuffield's "Tomtit," piloted by Mr. Sutcliffe.

ROUND II: FRIDAY, JULY 13th

For full information about competitors, see Table on p. 730.

Racing No.	Pilot	Handicap Allowance	Actual Flying Time	Speed	Place
		min. sec.	hr. min. sec.	m.p.h.	
HEAT 7.					
9	Broadbent ...	49 29	1 55 29	120.75	3
18	Pope ...	41 51	1 49 06	128	4
7	Lowdell ...	40 06	Landed 2 miles from Hatfield		—
5	Sutcliffe ...	36 44	1 39 22	140.5	1
16	Parker ...	36 58	Landed Wittering; weather		—
10	Morten ...	33 12	1 38 20	141.75	2
HEAT 8.					
17	David ...	57 04	2 2 37	113.75	2
21	Wilson ...	55 56	Returned; engine trouble		—
12	Edwards ...	51 33	1 55 56	120.25	1
2	G. R. de Havilland...	47 29	1 54 33	121.75	3
15	Schofield ...	45 32	1 54 39	121.5	4
3	Cook ...	19 06	1 28 33	157.75	5
HEAT 9.					
23	P. de Havilland ...	55 56	Retired		—
34	Lipton ...	48 28	1 55 19	121	2
24	Cathcart Jones ...	43 40	2 36 50	89	3
40	Napier ...	39 14	Landed Wittering		—
31	Gardner ...	38 23	1 43 58	134.25	1
43	Broad ...	17 26	Retired		—
HEAT 10.					
41	Mrs. Patterson ...	55 56	Landed Peterborough		—
35	Symington ...	46 30	1 59 29	116.75	2
28	Sparkes ...	33 58	1 45 14	132.5	1
42	T. Rose ...	32 04	2 11 46	105.75	3
26	Kirwan ...	23 15	Landed Barnwell		—
36	Comper ...	07 45	Landed Wittering		—

SEMI-FINAL: SATURDAY, JULY 14th

HEAT 11.							
17	David ...	47 08		1 40 57		114	3
9	Broadbent ...	40 52		1 34 48		121.5	4
35	Symington ...	38 24		1 34 13		122.5	6
15	Schofield ...	37 30		1 24 45		136	1
24	Cathcart Jones ...	36 04		1 30 53		126.75	5
31	Gardner ...	31 42		1 27 43		131.5	7
5	Sutcliffe ...	30 20		1 23 36		137.75	2
HEAT 12.							
12	Edwards ...	42 34		1 35 20		120.75	2
34	Lipton ...	49 2		1 34 08		122.25	3
2	G. R. de Havilland...	39 12		1 34 00		122.5	5
18	Pope ...	34 34		1 32 24		124.5	7
28	Sparkes ...	28 03		1 24 15		136.75	6
10	Morten ...	27 25		1 21 32		141.5	4
42	T. Rose ...	26 29		1 18 01		147.75	1
FINAL							
17	David ...	34 44		1 13 58		114.18	4
12	Edwards ...	31 23		1 10 53		119.77	6
9	Broadbent ...	30 07		1 10 09		121.03	8
34	Lipton ...	29 30		1 8 22		124.18	3
2	G. R. de Havilland...	28 54		1 8 26		124.24	5
15	Schofield ...	27 43		1 3 17		134.16	1
24	Cathcart Jones ...	26 34		1 7 12		126.34	9
5	Sutcliffe ...	22 22		1 2 13		136.46	7
10	Morten ...	20 12		Disqualified		141.46	—
42	T. Rose ...	19 31		0 57 27		147.78	2



FINISHING THIRD: Mr. L. Lipton crosses the finishing line as third in the King's Cup Race and winner of the Siddeley Trophy. (*Flight* Photo.)

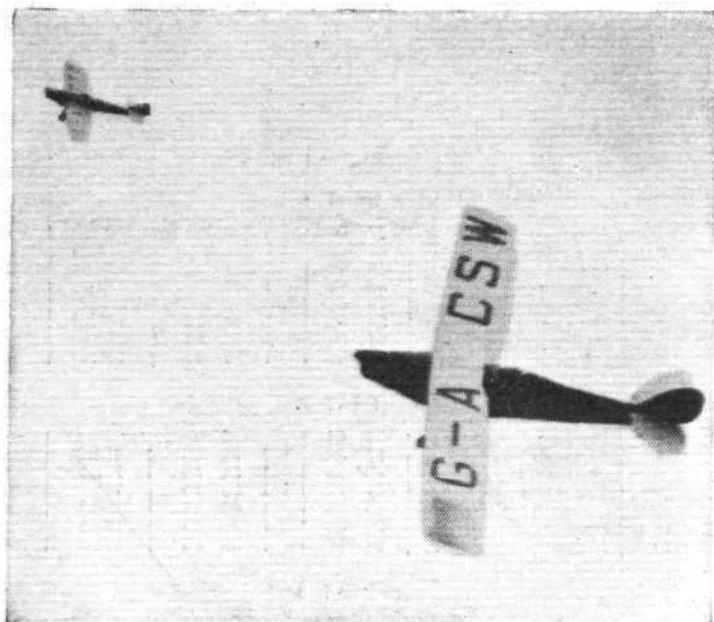
Gardner gave Schofield a start of nearly seven minutes, corresponding to a difference in speed of approximately 10 m.p.h., although Gardner's speeds in the two heats the day before had been only 130½ m.p.h. and 134½ m.p.h. respectively, compared with Schofield's 136½ m.p.h. in the first round. Sutcliffe gave David a start of approximately 17 minutes, but in spite of this it was thought that he might have a chance of overtaking all but Schofield.

At the end of the first lap (three had to be flown) Schofield had pulled up to third place and was close behind Broadbent. Sutcliffe overtook Gardner just before they reached Hatfield aerodrome and was obviously "going strong," the Wolseley A.R.9 engine humming lustily.

By the time the machines returned to Hatfield after the second lap Schofield had gained the head of the procession,



WINNER OF THE SIDDELEY TROPHY: Mr. L. Lipton receives the cup presented by Sir John Siddeley from Lord Londonderry. (*Flight* Photo.)



THE ONLY "THRILL": Mr. "Tommy" Rose overtakes Mr. Broadbent while rounding the Hatfield pylon. (*Flight* Photo.)

the next four were still in the same order as at the start, but Cathcart Jones had closed up considerably on Symington, while Sutcliffe was leaving Gardner well behind.

The result of this heat was a very easy first for Schofield, who had landed by the time Sutcliffe arrived, closely followed by David and Broadbent. There was a considerable gap between Broadbent and the last man to qualify for the Final, who proved to be Cathcart Jones. Symington and Gardner were out of the race.

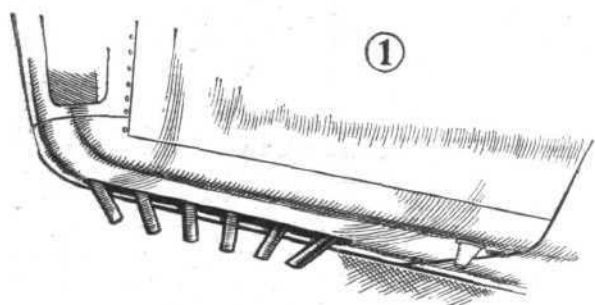
Second Heat, Round 3

The seven competitors left to fight for admission to the Final were: No. 12, Mr. Edwards on the Southern "Martlet"; No. 34, Mr. Lipton on a "Gipsy-Moth"; No. 2,

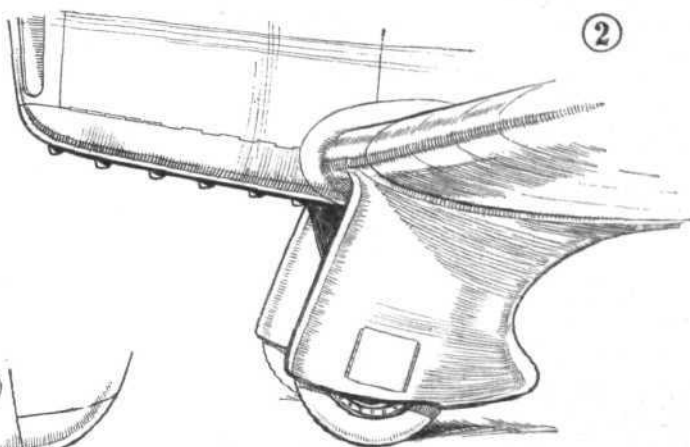


"JUST A SECOND": Mr. "Tommy" Rose gets the right time from Mr. G. Reynolds, the timekeeper. He secured second place in the King's Cup Race. (*Flight* Photo.)

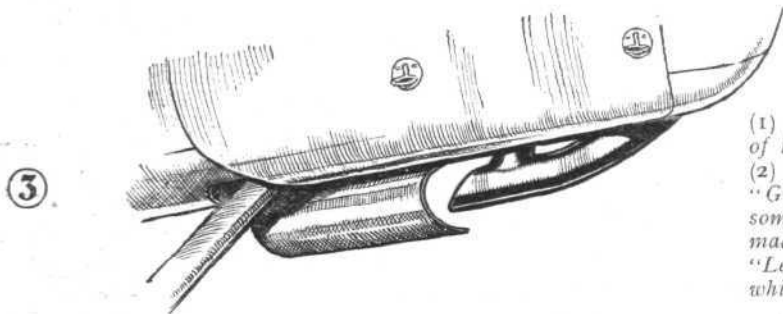
DESIGN AIDS TO SPEED



①

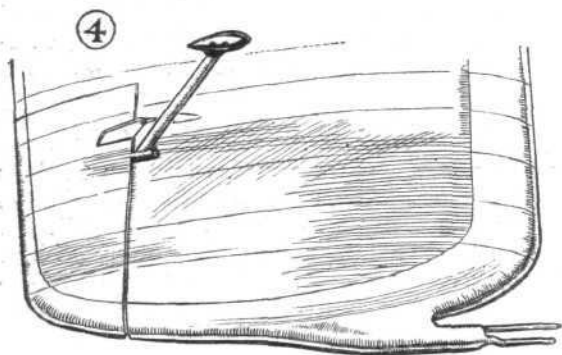


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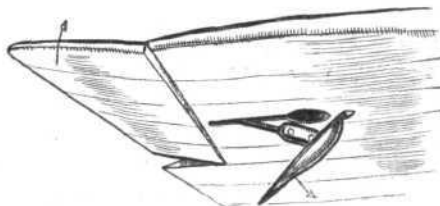


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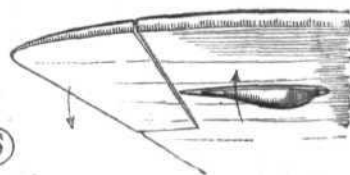
(1) How the exhaust is led away underneath the cowling of the "Gipsy Six" engine in the Klemm "Eagle." (2) Another way of arranging the exhaust pipes on a "Gipsy Six" engine—in the Miles "Hawk M.2"—also some details of the cantilever undercarriage of this machine. (3) A small curved guard on a D.H. "Leopard Moth," where the exhaust pipe was short, which served to keep the the fumes from coming up to the cockpit windows.



④

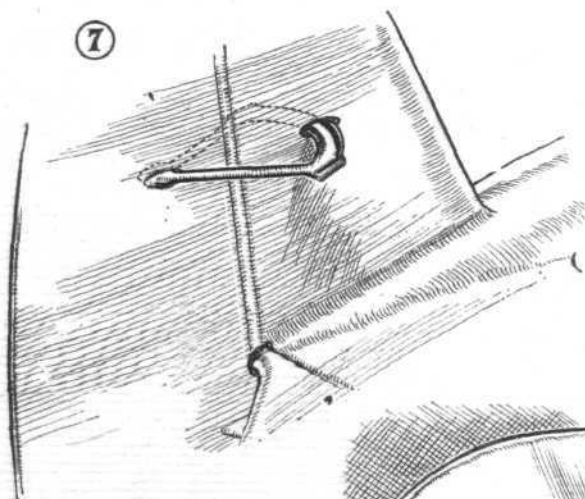


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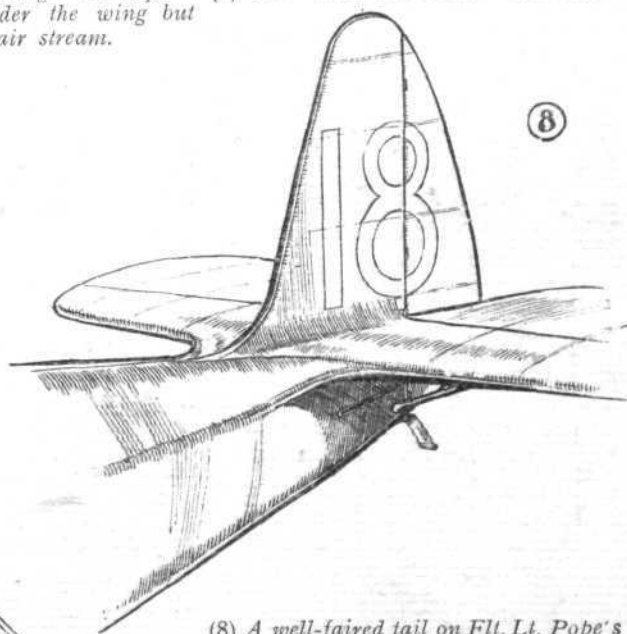


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(4) Shows how Flt. Lt. Comper arranges the aileron balance and pilot head on the wing tip of his "Kite." (5) On the "Hawk M.2" the balance is underneath but faired into the wing with this sprung "rat trap." (6) The "Leopard Moth" also has the aileron balance under the wing but exposed to the air stream.

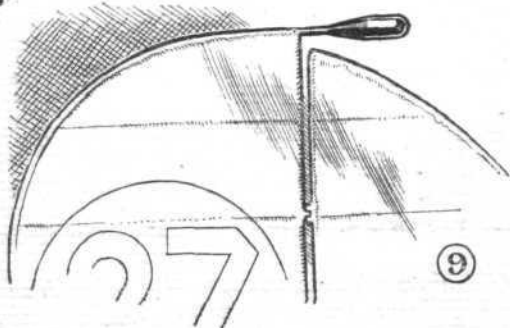


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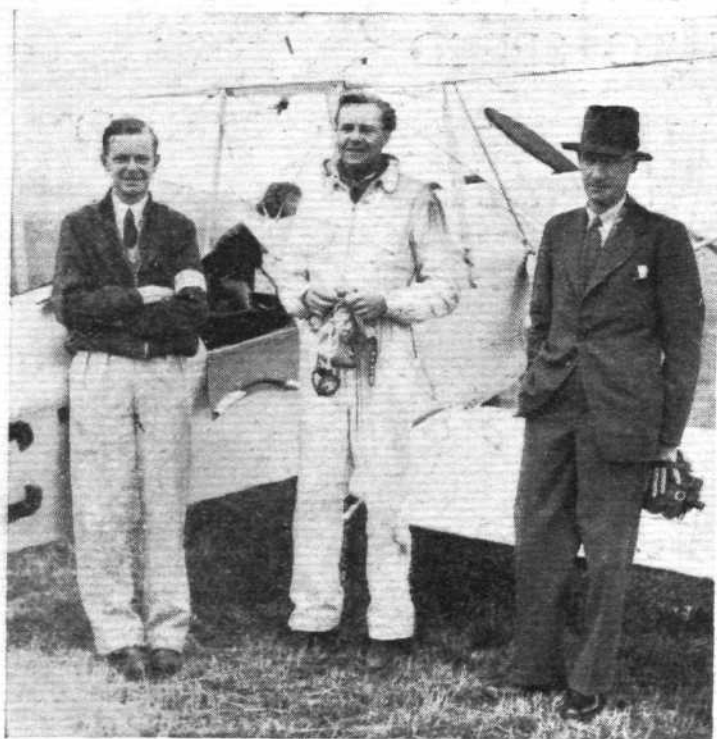
⑧

(7) On the rudder of both his "Streak" and "Kite," Flt. Lt. Comper arranges the mass balance as an arc working through a slot in the fin.



⑨

(8) A well-faired tail on Flt. Lt. Pope's Comper "Swift." (9) The mass balance on the rudder of the Hendy "Hobo."



UNLUCKY BUT UNDISMAYED: Capt. G. de Havilland (right) and his two sons, Geoffrey and Peter, had little luck in the race, but Geoffrey did get into the Final on "T.K.1" as fifth. (Flight Photo.)

young Geoffrey de Havilland on the "T.K.1"; No. 18, Flt. Lt. Pope, of A.S.T., on a "Pobjoy-Swift"; No. 28, Mr. Sparkes on a "Leopard Moth"; No. 10, Mr. Morten on Sir Derwent Hall-Caine's "Leopard Moth"; and No. 42, Mr. "Tommy" Rose on the Miles "Hawk" with "Gipsy III" engine. The handicappers had assessed the difference in speed between the two "Leopards" at about

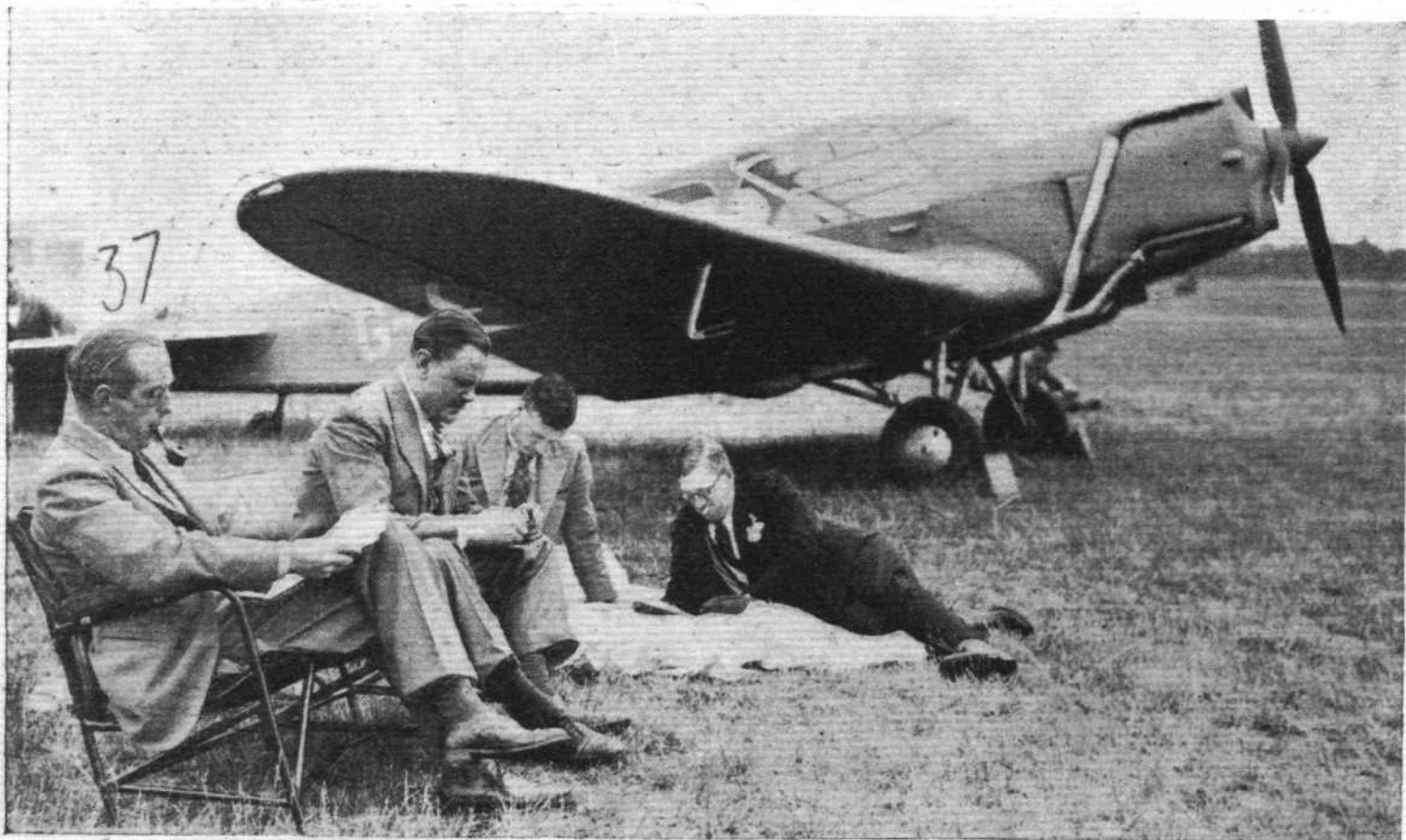
one m.p.h. The main difference seemed to be that No. 10 had a Fairey metal airscrew while No. 28 had a wooden propeller, Mr. Sparkes carried a passenger while Mr. Morten was flying solo. In Friday's trial No. 10 had proved some four m.p.h. faster than No. 28, so that Sparkes did not appear to have much chance in this heat.

The "dark horse" of heat 12 was "Tommy" Rose. His racing during Friday had been done in atrocious weather, and the speeds established were of no value as a guide to what the "Hawk" could do in good weather. "Tommy" was giving Edwards a start of some 16 minutes and was giving one minute away to the "Leopard" ahead of him. How would he fare? One did not have very long to wait for the answer. When the machines came in at the end of the first lap, "Tommy" had pulled up to fifth place, having overtaken the two "Leopards." Morten had overtaken Sparkes, who was thus flying last. The wind, which was gradually veering more towards North, seemed to have freshened, and as the machines rounded the pylon and turned down-wind, they came across the aerodrome at fine speed.

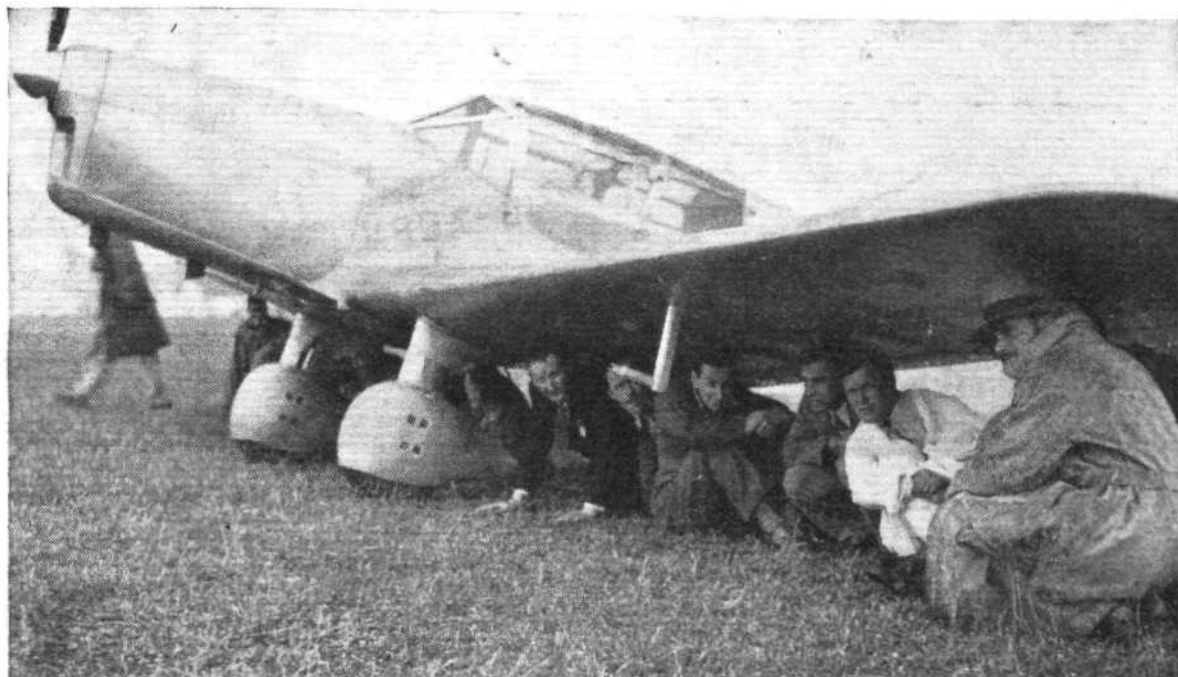
At the conclusion of the second lap "Tommy" Rose had gained fourth place, and Morten had overtaken Pope. The first three machines had kept their relative order. At the end of the third lap "Tommy" Rose was well in the lead, and swung around and landed just as Edwards crossed the finishing line as second. Lipton and Morten arrived together, the former flying above the latter. Fifth place was won by Geoffrey de Havilland Jr., on the "T.K.1." Sparkes and Pope were eliminated, the latter being completely outclassed and finishing long after the others.

Relief

After the monotony of racing, the short demonstrations given on machines, mostly fast, which had been eliminated during the earlier events came as a great relief. Flt. Lt. Healey was first with the Comper "Kite" (Pobjoy 90 h.p. "Niagara"), which is a very handy little two-seater developed from the Comper "Streak." Prophetically or



NAPIERIAN LOGS: From left to right, Air Vice-Marshal Borton, Mr. Winter, Mr. Smith, Mr. Savage, and the "Rapier" in the "Courier." (Flight Photo.)



WHEN THE DROUGHT BROKE : The low-wing Monoplane Tendency was not appreciated by everyone. (*Flight Photo.*)

otherwise, the registration letters of this machine are ACME. Capt. W. L. Hope was next on a Percival "Gull" with "Gipsy Six" engine. The machine is obviously fast, but in the racing on Friday did not prove as fast as the handicappers had evidently thought it.

Another "Gull" with "Gipsy Six" engine was demonstrated by Flt. Lt. H. H. Leech, who came closer to providing the spectators with a real thrill than anything which had happened during the two days of the King's Cup Race.

Mr. Miles took up the "Hawk" with "Gipsy Six" engine in which Sir Charles Rose had been "eliminated" by obscure trouble the day before. Immediately after leaving the ground he put the "Hawk" into a very steep climb, finally "hanging on the prop" for many seconds. The lateral controls of this machine must obviously be very effective. After a couple of demonstrations of flying past at full speed and finishing up with long "zooms" terminating in loops, Mr. Miles demonstrated how a forced landing can be made with this machine. The gliding angle is evidently very flat.



THE THIRTEENTH : Mr. Jackaman's Monospar was No. 13 in the thirteenth King's Cup Race, and he was "eliminated" on July 13th. He is seen here checking the "revs." of his Pobjoy engines. (*Flight Photo.*)

The British Klemm "Eagle" with "Gipsy Six" engine was demonstrated by Mr. Irwin. The machine is fast, and with undercarriage completely retracted looks remarkably clean. The lines are very beautiful. It was noticed that the engine emits a curious rattling sound in this machine, probably due to the somewhat peculiarly shaped exhaust pipes. Mr. Newman demonstrated Sir Norman J. Watson's Comper "Mouse," and the pleasant interlude concluded with some very spectacular fly-past-and-zooms by Mr. Percival on the "Mew Gull" ("Gipsy Six").

The Real King's Cup Race

By the time the ten machines left to compete in the Final had been lined-up on the starting line, the sun had come out and the weather was very pleasant, with not too much heat or glare, yet with good visibility for the competitors. The machines had to round a lorry carrying a red flag, placed in the north-west corner of the aerodrome, before turning right to get on their course. This meant that they were heading in the direction from which, during the six laps of the Final course, they would be



MILES OF SMILES : Through his plucky flight during Friday's bad weather Mr. "Tommy" Rose got a Miles "Hawk" into the Final and secured second place. This group includes Mr. Miles, Miss Lott, Mr. Powis, and Sir Charles Rose. (*Flight Photo.*)



LARGEST OF THE LOT : Capt. Hubert Broad finishing a heat on the "Dragon Six."
(Flight Photo.)

returning to Hatfield, and there was some speculation as to whether this fact might give rise to risk of collisions, as the limit man would obviously be back after his first lap before some of the fast machines had started. The line-up for the Final, in the order of starting, was as follows:—

NO.	PILOT.	MACHINE AND ENGINE.
17	David	Blackburn B2, "Hermes IVA"
12	Edwards	Southern "Martlet," "Gipsy I"
9	Broadbent	"Fox Moth," "Gipsy Major"
34	Lipton	D.H. "Moth," "Gipsy III"



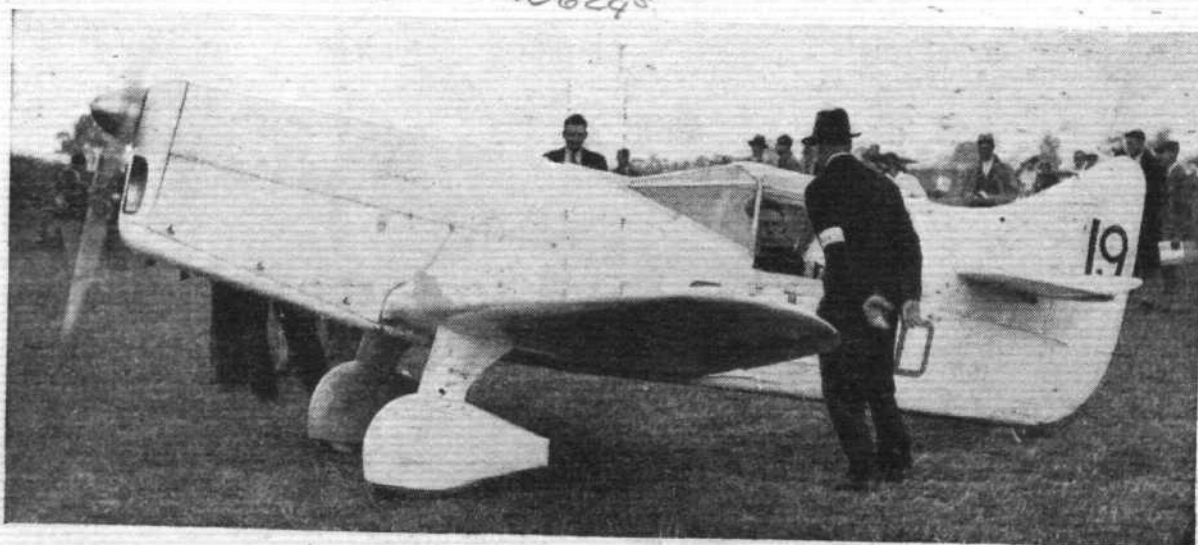
THE ONLY LADY COMPETITOR : Mrs. G. Patterson was forced down near Peterborough by Friday's bad weather. (Flight Photo.)



A TIGHT FIT : Flt. Lt. Pope housed his parachute in the luggage locker of the Comper "Swift."
(Flight Photo.)

NO.	PILOT.	MACHINE AND ENGINE.
2	de Havilland	"T.K.I," "Gipsy III" (jun.)
15	Schofield	"S.T. 10," Two "Niagara"
24	Cathcart	"Puss Moth," "Gipsy III"
	Jones	
5	Sutcliffe	"Tomtit," "Wolseley A.R.9"
10	Morten	"Leopard Moth," "Gipsy Major"
42	Rose	"Hawk," "Gipsy III"

As the Blackburn B2 finished the first lap the "Tomtit" was just heading for the lorry with the red flag, and



PRINCE GEORGE'S ENTRY : The Percival "Mew Gull" (Gipsy Six), although it averaged 191 m.p.h., was not fast enough to beat the handicappers. (Flight Photo.)

had to turn right slightly to avoid the oncoming machine. Almost the same happened again as Edwards, on the "Martlet," was finishing his first lap and "Tommy" Rose was starting off. There was considerable cause for anxiety, but when the scratch man had started all machines were going the same way around.

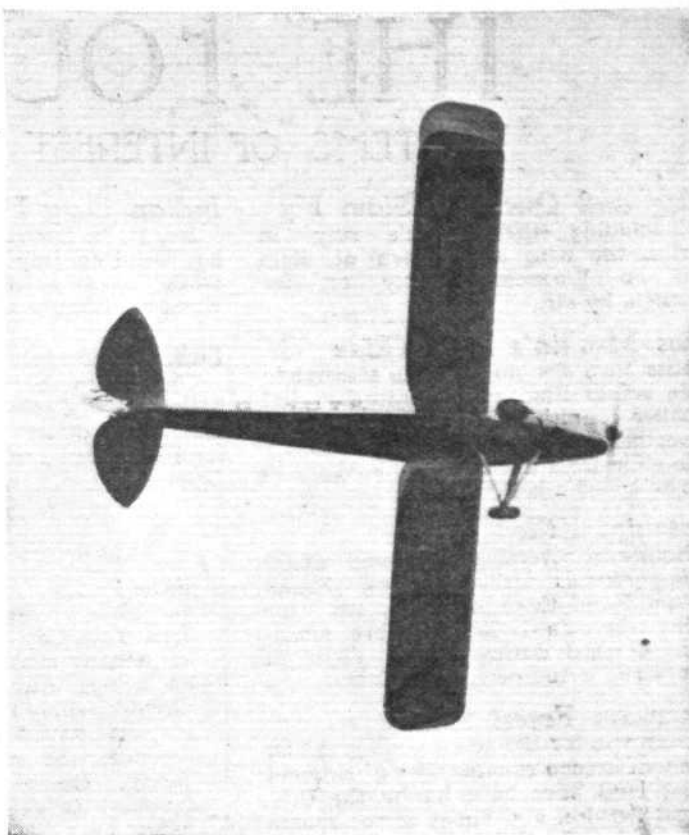
After the first lap all ten competitors kept their places, but "Tommy" Rose completed his first lap just behind David finishing his second, so that he had a whole lap to make up. Would he do it?

By the end of the third lap Schofield had pulled up to second place. David was still leading, Edwards had dropped into third place, with Lipton in fourth, and Broadbent dropped back to fifth. Young de Havilland and Cathcart Jones had each dropped back one place, Rose had overtaken Morten, but had not yet caught up Sutcliffe. Morten did his banks around the pylon very steeply. In fact, at times he appeared to be "past the vertical." His spectacular cornering did not, however, avail him much, as he was reported to have failed to pass a turning point correctly. Blissfully unaware of this, he continued his course.

By the end of the fourth lap Schofield had gained the lead, having passed David just before reaching the aerodrome. Edwards and Lipton followed, close together, with Broadbent in fourth place, hotly pursued by de Havilland. "Tommy" Rose had pulled up to eighth place, thereby leaving Sutcliffe and Morten in ninth and tenth respectively.

After Schofield had completed the fifth lap there was a long wait, he having left the others far behind. At long last David came along, followed by Lipton, who had come into third place. "Tommy" Rose pulled into sixth place by flying above Broadbent, who was cornering low. Morten again did a vertical bank, but shortly after starting on the last lap was announced to have once more failed to round a turning point.

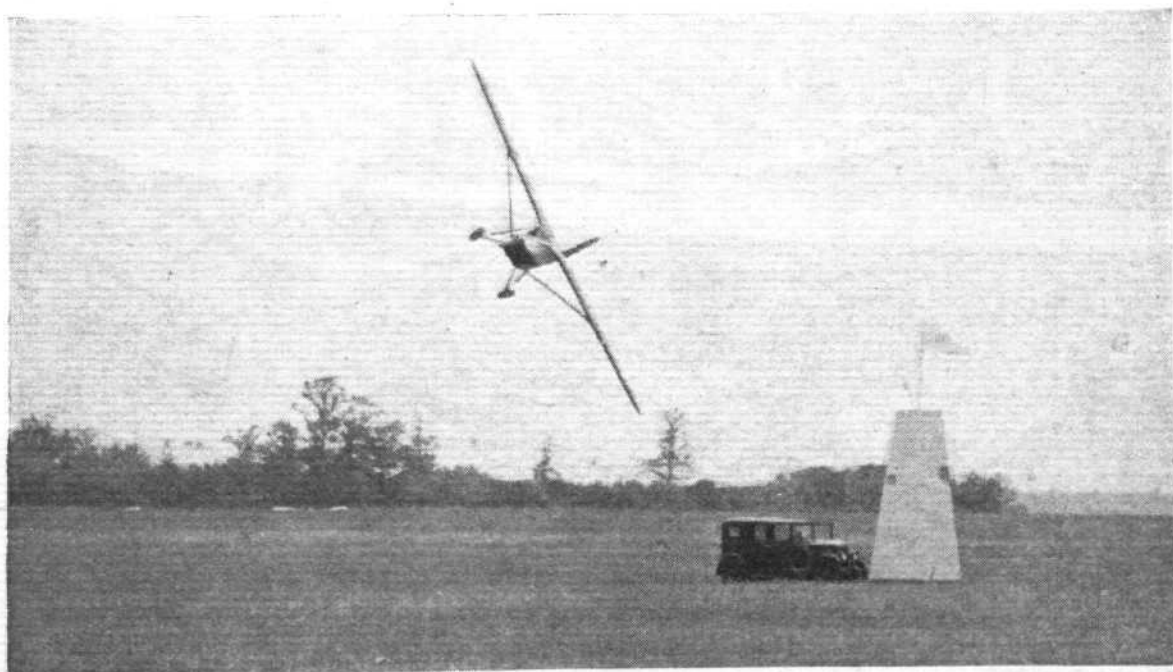
There could, by this time, be no possible doubt about the winner. Unless Schofield should, as the announcer described it, "blow up," he could not well fail to win. But the question of second place was still in doubt. In the fifth lap Lipton had been in third, and he might catch up with David. And "Tommy" Rose had been going great guns, and might possibly jump from sixth to second. This he ultimately did, leaving Lipton in third place.



A GOOD EFFORT: The "T.K.1" designed and built by students of the de Havilland Technical School was flown into the Final by G. de Havilland, Jun. (*Flight Photo.*)

In addition to winning the King's Cup, Schofield won Lord Wakefield's First Prize of £250.

Mr. "Tommy" Rose, by gaining second place, secured Lord Wakefield's Second Prize of £100, while Mr. Lipton, apart from winning the Trophy presented by Sir John D. Siddeley for the highest-placed club representative, got Lord Wakefield's Third Prize of £50. Mr. David won the Silvertown Prize of 25 guineas.



WASTE NOT WANT NOT: In spite of following this excellent motto Mr. Cathcart Jones failed to gain a place in the race, although he did get Mr. Gandar Dower's "Puss Moth" into the Final. (*Flight Photo.*)

THE FOUR WINDS

ITEMS OF INTEREST FROM ALL QUARTERS

King and Queen of Siam Fly

Concluding their week's stay in Berlin, the King and Queen of Siam left, on Wednesday, July 11, for Dresden, by air.

Miss Meakin's Long Glide

Miss Joan Meakin made an attempt to glide across England on Saturday, but weather conditions cut her effort short. Nevertheless, she accomplished a fifty-mile glide from Bristol to Shrewsbury in one hour and a half.

Antonini Killed

Holder of several altitude and weight lifting records for aeroplanes, Signor Antonini and three other airmen were killed when an Italian bomber monoplane crashed during a test flight at Montecelio aerodrome, near Rome.

American Forest Survey

Contracts for the aerial photographing of about 10,000 square miles of national forest land have been let by the U.S. Forest Service, and about 20,000 square miles will, it is expected, be surveyed or photographed from the air by the service this summer. In many cases maps will be made from the photos obtained.

Indian Long Distance Flight

Mr. R. N. Chawla, a Punjabi airman, left Delhi on July 11 in a D.H. "Puss Moth" in an attempt to fly round the world *via* London.

U.S. Stratosphere Attempt

Claimed to be the world's largest balloon, the *Explorer* will carry three U.S. army officers on a new altitude record attempt from Rapid City (South Dakota).

Soviet Instruction

During this year the Soviet Government will open 60 new flying schools.

The Banquet to Blériot

As announced last week, the Royal Aero Club is giving a banquet to M. Louis Blériot on July 25, at the Royal Aero Club, 119, Piccadilly, at 8 p.m., in commemoration of his Cross-Channel flight twenty-five years ago. Lord Gorell will preside, and the principal guests will be the French Ambassador and Lord Londonderry.

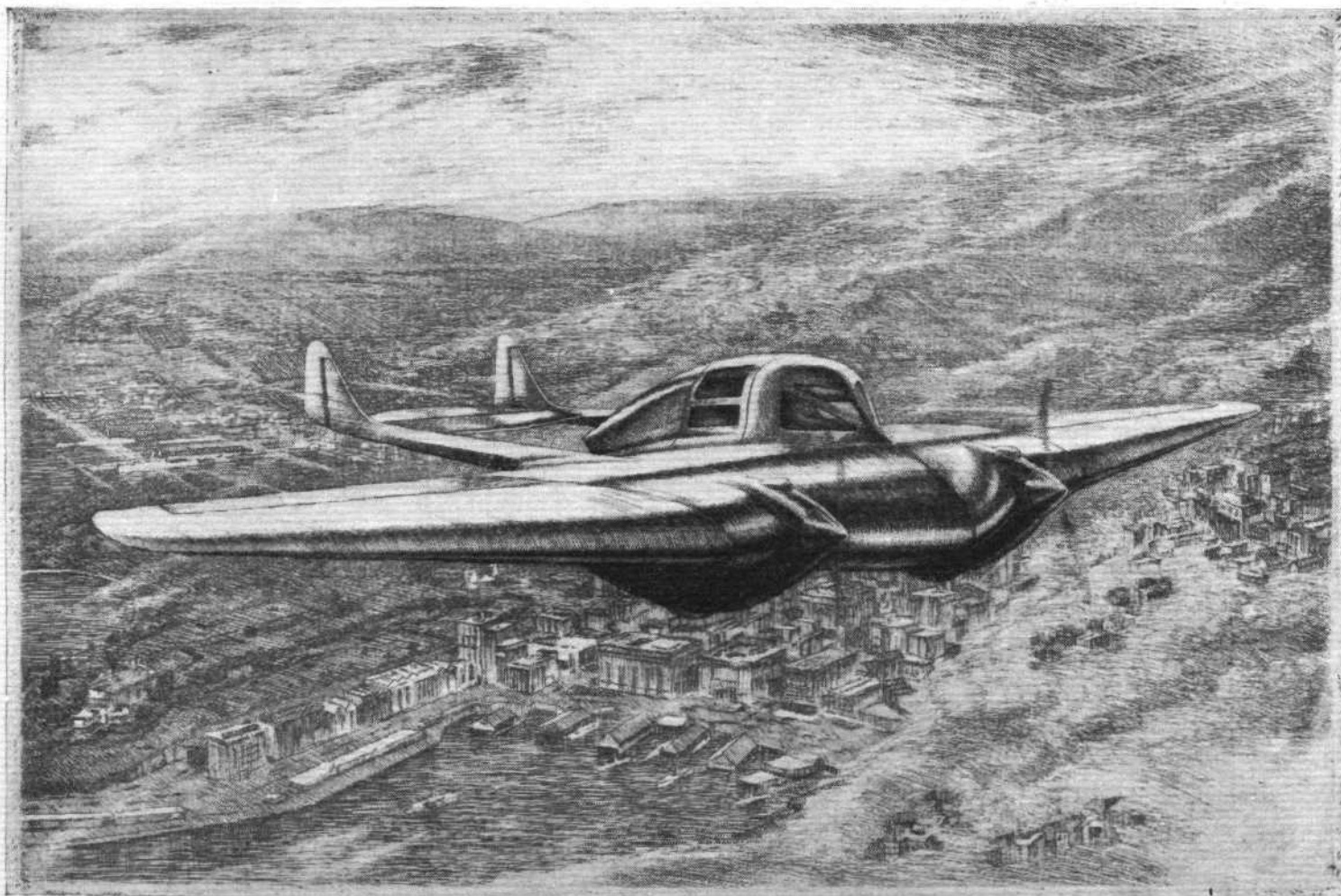
Twenty-five Years Ago

From "Flight" of July 17, 1909.

"More Progress.—Residents of New York City rubbed their eyes on Monday morning of this week, on looking heavenwards, to see a dirigible calmly riding above them. It was navigated by Mr. F. Goodale, who, starting from New Jersey, crossed the river and travelled southwards over Manhattan for a distance of about four miles, when he returned against a moderate head wind and made a safe descent outside his shed."

"Los Angeles" Condemned

It has been announced by the Secretary of the U.S. Navy that the naval airship *Los Angeles* has been condemned as unairworthy because of deterioration, through age, of its material. The National Research Council has asked permission to take the ship to Akron, Ohio, for experimental work, but there was no way of towing it, and the Navy Department would not take the risk of putting it into commission for the trip. It is now to be kept at the mooring mast at Lakehurst, New Jersey, for experimental work.



ALL AUSTRALIAN. This etching by Mr. E. Warner shows the "All-Australian" machine, which is being built in Sydney, as it would appear flying over Circular Quay, Sydney. The machine was designed by Mr. T. D. J. Leech, B.Sc., M.I.Ae.E., A.M.I.E., and Mr. L. J. R. Jones. It is to be of all-metal construction and will have two Australian Harkness Hornet engines.

Sir Hubert Wilkins

Sir Hubert Wilkins, who, as reported last week, left Croydon on July 7, in an Imperial Airways air-liner for Singapore, arrived there on Sunday. He is proceeding by steamer to New Zealand to join the Ellsworth Antarctic Expedition.

Premier Flies to Belfast

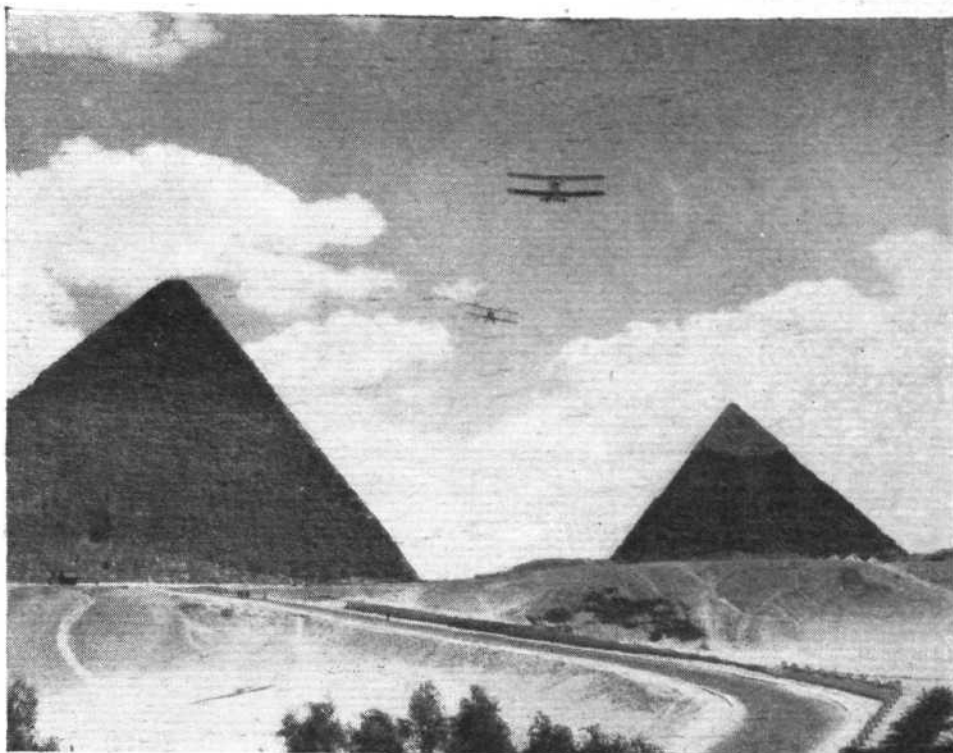
On the commencement of his holiday trip to Canada, the Premier flew on Wednesday, July 11, from Lossiemouth to Worksop and thence to Belfast in a machine belonging to Aberdeen Airways to join the liner for Canada.

R.A.F. Flying Boat Cruise

No. 202 (Flying Boat) Sq., R.A.F., from Malta, are now concluding their cruise to places in Greece, Cyprus, Palestine, Egypt and the Sudan. They were expected at Rhodes and Athens on Tuesday, and are due back at Malta on Saturday next.

Air Minister's Busy Day

Lord Londonderry inspected two exhibitions on Monday—the exhibition of aerial photographs, "Flying Over the Empire," organised by Imperial Airways at the Gieves Gallery, Old Bond Street, and the Special Exhibition of Aircraft Models in the new Air Section at the Royal United Service Museum.



"THE CAMELS ARE COMING": A striking "shot" from the new Gainsborough film of this title taken in Egypt. The story is centred around the exploits of Jack Hulbert as Squadron Leader in the E.A.F., and above is seen an exciting chase over the Pyramids. Anna Lee is the leading lady in this film.

Planes Help in Heath Fires

During the serious heath fires which occurred over large areas of Hampshire, Surrey and Berkshire last week, R.A.F. aeroplanes from Farnborough patrolled the area and gave reports of fresh outbreaks.

Air and Radio Help for Police

Some interesting experiments were carried out last week in connection with assisting the police in capturing bandits or other criminals escaping in a fast car, by means of aircraft equipped with wireless. These experiments took the form of a demonstration, arranged by Marconi's Wireless Telegraph Co., Ltd., of wireless co-operation between an aeroplane and a police patrol car to the Chief Constable of the Leicestershire County Police, at the Desford Aerodrome, near Leicester. A mimic robbery was staged, in which two men, supposed to have robbed a Banbury bank, were seen to escape northward in a car. The aeroplane and a police patrol car, to the Chief reported that the car had been identified. Instructions as to the car's movements were then sent out from time to time, and eventually the car was captured.

Haymaker Killed by Aeroplane

Accidental death, caused by an error of judgment on the part of the pilot, was the verdict recorded at an inquest at Horley (Surrey) on Mr. Harry Knight, of Chorlwood. He was killed by an aeroplane while haymaking. The machine was practising forced landings.

The R.A.F. in Canada

On Saturday last a magnificent combined display was given at Ottawa by thirty-five aeroplanes of the Royal Canadian Air Force and the flight of Hawker "Furies" of the Royal Air Force from England, under Wing Commander G. C. Pirie. The following Monday, the "Furies" gave a final display of aerobatics at Montreal.

Belgian Stratosphere Flight

M. Max Cosyns and M. N. Van der Elt were expected to start on their flight into the stratosphere on Wednesday—provided meteorological conditions were favourable—from Hour-Havenne (70 miles from Brussels). It is probable, therefore, that as we go to press their balloon will be soaring many many miles above the earth.



AT ST. FRANCIS CHAPEL: Sir Charles Kingsford Smith places his wings and autograph on the "Famous Flyers' Wall," in St. Francis Chapel International Shrine for Aviators, California, U.S.A.

Diary of Forthcoming Events

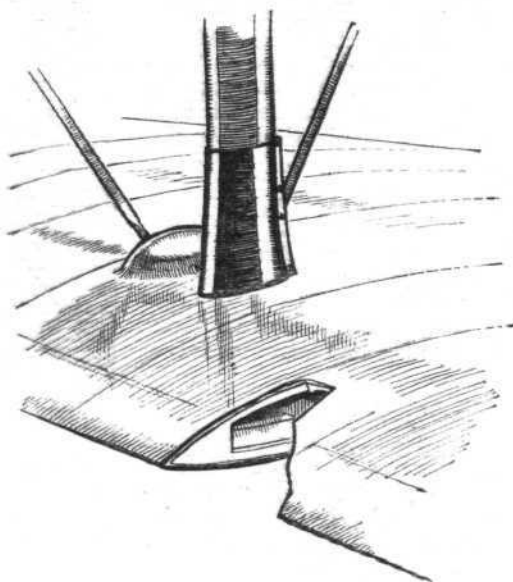
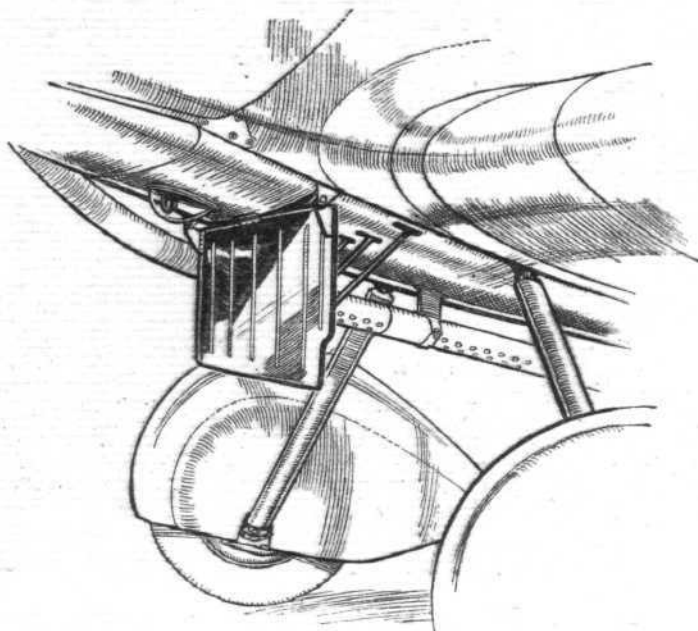
Club Secretaries and others are invited to send particulars of important fixtures for inclusion in this list:

July 21. Round the Isle of Wight Air Race.
 July 21-22. French Grand Prix. Deauville—Cannes—Deauville.
 July 22. Southend Flying Club "At Home".
 July 25. Royal Aero Club Dinner to M. Louis Bleriot.
 July 28. Burnham-on-Crouch Aerodrome; official opening by the Duchess of Bedford.
 July 28. Bristol and Wessex Ae.C. Garden Party.
 July 29. London-Sherburn Race (York County Aviation Club).
 Aug. 11. London-Newcastle Race (Newcastle-on-Tyne Ae.C.).
 Aug. 15. Air Tour of Italy.
 Aug. 17-Sept. 6. Copenhagen Aero Show.
 Aug. 18. Cotswold Aero Club Air Rally and Garden Party

Aug. 25. Liverpool and District Ae.C. Garden Party, Speke Aerodrome.
 Aug. 28-Sept. 16. International Touring Competition, Poland.
 Sept. 1-2. Cinque Ports Flying Club International Rally, Lympne.
 Sept. 8. Official Opening of Walsall Aerodrome.
 Oct. 6. London to Cardiff Air Race and Cardiff Ae.C. Garden Party.
 Oct. 7. Aviation Golf Meeting, Royal Porthcawl Golf Club Porthcawl.
 Oct. 20. England-Australia Race for MacRobertson Prize.
 Nov. 16-Dec. 2. 14th International Aviation Exhibition, Grand Palais des Champs-Elysees Paris.

FEATURES OF KING'S CUP MACHINES

Other Sketches will be found on p. 733



This is how a metal sheet is arranged to act as an air brake on the Percival "Gull." On the right is shown the sharp leading edge to the wing and fairing cuffs on the wing struts of the Blackburn "B.2 Trainer."

AN inspection of the entries before the race revealed some interesting points which accounted for variations in the handicap, as compared with last year, of aeroplanes which were again racing this year. Other variations of handicap between machines which were, on paper at any rate, the same, were also accounted for.

Starting round in order of racing numbers we came first to Mr. Aga's "Moth." This was a standard "Moth Major" with open cockpits, a passenger and a "Gipsy Major." The D.H. Technical School "T.K.I." had a fuselage of smaller cross-section than a "Moth," and the wing roots and strut ends were nicely faired in. There had, however, been some misunderstanding about these latter details in the entry form and the handicappers had ordered their removal. This was unfortunate, because it was generally understood that this machine had been clocked to do a speed of nearly 130 m.p.h. in its cleaned-up state, so it would have had something like 8 or 9 m.p.h. in hand over its handicap, and was therefore greatly fancied by the students. The three Hawker "Tomtits" with their Wolseley engines caused some comment, as they appeared to be handicapped at an even lower speed than last year, although they had, in that race, made faster speeds than expected. This was accounted for by the fact that this year they were flying with open cockpits in the front containing extra fuel tanks.

Mr. H. R. A. Edward's Southern "Martlet," originally built for the late Miss Winifred Spooner to race in the King's Cup Race some years ago, was well streamlined with fabric insets at wing roots and strut ends, but the fabric sides of the fuselage looked rather slack.

Sir Derwent Hall Caine's "Leopard Moth" had the wing roots faired in so that it was non-folding, and the wing strut ends were also "cuffed"; these small attentions resulted in an extra few m.p.h. over the speed of the standard "Leopard Moths."

Flt. Lt. Pope's Comper "Swift" had all the obvious points well faired in, particularly the tail. Perhaps this latter, which our artist has sketched, served to retain the air flow over the rudder so as to give good control at all speeds, much in the same way as has been done on the new

Fairey General Purpose aircraft built for the Air Ministry.

The Miles "Hawk M2" with the "Gipsy Six" engine was one of the best-looking machines in the race. The engine cowling merged into the fuselage line perfectly, and the hood over the pilot's cockpit tailed off aft in a pleasing manner. The cantilever undercarriage, as our sketch shows, was most clean, and should prove to have a very low drag. The mass balances on the ailerons were arranged to go up into the wing on the underside when the aileron was in the normal position, and a hinged fairing served to maintain the air flow over it when the aileron was raised.

The Percival "Mew Gull," of which great things were expected, looked very racy indeed with the new heavily tapered wing. The landing speed did not seem unduly high nor the run exceptionally long, in view of the general design and wing loading, despite the fact that the wing flaps were not being used. It is said to be particularly pleasant on the flying controls.

The "Tiger Moth" flown by Peter de Havilland had large fillets at the wing roots, and the fuel tank was faired in. These alterations gave the machine several more m.p.h. than was expected.

Mr. Lipton's "Moth" was faired in to the *n*th degree and attractively finished in two shades of green. His leading edge and wings generally were considerably torn by the rain and hail on Friday, but this damage was repaired during the night, so that it came out looking perhaps one of the prettiest machines on Saturday.

Mr. Gandar Dower's British Klemm "Eagle" had had some slight trouble during practice before the race with the fairings which close the holes in the bottom surface of the wings into which the wheels retract, and was therefore flown without these fairings. The consequent holes must have detracted from the performance.

On the whole, there was not so much special streamlining for the race as there has been in previous years, which looks as if pilots are agreed that it does not pay unless everything is completely streamlined so that the handicappers underestimate the performance. A standard machine with a thoroughly tuned engine seems likely to get the better handicap.

PRIVATE FLYING

A SECTION FOR OWNER-PILOTS
AND CLUB MEMBERS

THE burning topic of the hour is the necessity for building up the air strength of this country, not as a gesture of aggression but as a means of ensuring the safety of our people in an age when the nations of the world are as unsettled as at any period in history. Adequate air protection is an essential insurance policy. In safeguarding our possessions by the ordinary methods of insurance we usually supplement the main cover by taking additional precautions, e.g., if we insure our car or aeroplane against fire and other risks, we carry, in addition, a fire extinguisher, and seek to maintain our vehicle in such a condition as to reduce the risk of accident to a minimum.

If, therefore, we look to a strengthened Air Force to provide our main insurance against emergencies, we should not overlook the obvious method of supplementing this safeguard, which is the building-up of private flying, by every possible means. We have heard of the intention to provide a large additional sum for the increase of our Air Forces, which is an admission that we must recognise in aviation our first line of defence. How much sounder this method of protection would be if it were backed by a large civil personnel trained in all aspects of air pilotage. There is, then, without doubt, an unanswerable case for Government assistance for private flying. That this is recognised in official quarters—to some extent at least—is indicated by the recently announced intention of the authorities to widen the scope of subsidies for flying clubs. In this connection we must also welcome the official financial support, meagre though it is, of the British motorless flying movement. The cost of these concessions represents, however, a negligible proportion of what we are preparing to spend on air defence, and those of us who are intimately concerned with "private flying" feel that this branch of aviation is deserving of a fuller measure of support, not only as a potential reserve which might be drawn upon in the hour of need but as representing in itself a source of future prestige to the country.

A Case for Consideration

APART from the question of direct subsidy, one might mention a privilege, which, if conceded, would help to reduce the cost of the facilities offered by the flying clubs to their members. There is a growing body of opinion, recently voiced in the House of Commons, that the tax on motor spirit used for aviation purposes should be remitted. It is claimed that such a concession is justified by the fact that the tax imposed is mainly utilised by the Road Fund, and that, as aircraft do not use the public highways, it is hardly fair that 50 per cent. of the cost of aviation fuel should represent an impost which is largely devoted to other interests. Those who are familiar with the essential costs of flying will realise the considerable proportion which the provision of petrol represents. If the price of motor spirit were reduced by one-half, civil aviation generally would benefit enormously, and private and club flying could be made to appeal still further to those of limited means.

NOTES

by

LORD SEMPILL

A.F.C., F.R.Ae.S.

The King's Cup Race

UNDISMAYED by the fact that this thirteenth annual event was due to commence on Friday, the thirteenth of the month, forty-three competitors entered. When I arrived at Hatfield in a drizzle the visibility was too bad to admit of a punctual start. This was discouraging after such a long spell of fine weather, but the delay of one hour and a half before the first machine could start gave an additional opportunity of looking round. It was of particular interest to those concerned with private flying to note that, of the forty-three entries, thirty-five different machines were represented, and, with the exception of three or four, all were standard types suited to the various requirements of the owner-pilot.

No finer assembly of private aircraft have ever lined up for the race. Although most of the machines were of comparatively recent design, a few of the older types were again in evidence. With scarcely an exception, however, they had been designed in the first place specifically for the purposes of civil aviation. This has not always been the case, as in previous years a considerable proportion of the entries were machines of the powerful service type. It is, therefore, good to see that the race has now become really representative of the skill of the private pilot and of the aircraft and engines specially designed for his use. Of those who had entered, three previous winners, Capt. Geoffrey de Havilland, Capt. W. L. Hope, and Capt. H. S. Broad, were again taking part. Capt. de Havilland had the unique distinction of competing with his two sons, Geoffrey and Peter. This must, I think, have been the first occasion on which three members of the same family have taken part in the race. Of the machines entered, fifteen were piloted by the entrants themselves. Very considerable interest was, of course, shown in the attractive "Mew Gull," entered by H.R.H. Prince George, and flown by its designer, Mr. E. W. Percival. Other particularly interesting entries were those of Viscount and Lady Wakefield of Hythe—a "Dragon Six" and a Comper "Streak" respectively—and the three Hawker "Tomtits" with Wolseley A.R.9 engines, which again represented Lord Nuffield. Certainly one of the most notable machines was the new "Hornet" Moth, designed and flown by Capt. de Havilland. This little biplane is an enclosed, side-by-side two-seater with a good performance, and is extremely well thought out in all details. There is a good forward view from both seats, which are not only arranged in a sociable fashion but are roomy and comfortable. This machine could undoubtedly fill a definite need, and when put into production should come out at a price not greatly in excess of the present two-seater "Moth."

With regard to the race itself, of the survivors of Round I the only lady participant, Mrs. G. Patterson, is to be congratulated on winning her heat. After her good performance in the first round, it was unfortunate that she should have had to contend with such bad weather conditions in the second. However, she had at least the

consolation of knowing that it proved too much for several male pilots of far greater experience. Capt. de Havilland was consoled for his own lack of success by the fact that his two sons took first and third places in their respective heats. Flying as he was on a machine designed and constructed by the pupils of the de Havilland School of Aeronautical Engineering, Mr. G. R. de Havilland's achievement was a credit to all concerned. It was interesting to note that the two machines entered by Capt. W. S. Stephenson—one a five-year-old "Desoutter Mark I," piloted by Flt. Lt. J. B. Wilson, and one of the latest "Monospars," flown by Flt. Lt. H. M. Schofield—both took first places in the preliminary heats. Flt. Lt. Wilson put up a really good performance, but was unlucky enough to be forced down in his second heat by tappet trouble. Flt. Lt. Schofield's machine proved to have something in reserve, and he qualified for the final, in which, flying with good judgment, he took first place with nearly three minutes to spare.

Of those who failed to qualify for the later rounds, Prince George's entry, the "Mew Gull," whilst putting up an

average speed of 191 m.p.h., the highest ever recorded in a King's Cup Race, only managed to obtain a fifth place. Another notable failure was Capt. W. L. Hope, who has won the race on three occasions.

A Meritorious Flight

WHILST the King's Cup Race provides a strenuous test for the light aeroplane types, the real value of the modern machine is proved by the practical use to which it can be put. As an example of its efficiency and reliability, reference might be made to a very fine flight achieved a few days ago by Miss Delphine Reynolds, who piloted her "Leopard Moth" in one day from Rome to Croydon with but two stops for petrol. The distance of over eleven hundred miles was covered in about 10½ hours' flying time at an average speed of 105 m.p.h. against a head wind. When such a flight can be accomplished in the ordinary course of travel without special preparation, it shows clearly that, with good navigation and when intelligently used, the aeroplane of to-day is a very valuable and reliable means of transport.

FROM THE CLUBS

Events and Activity at the Clubs and Schools

NEWCASTLE-ON-TYNE.

In spite of the unsuitable weather conditions during the last two days 57 hours were flown last week, and three members carried out their licence tests.

HAMPSHIRE

Fifty-five hours forty-five minutes were flown at Eastleigh last week by the Hampshire Aeroplane Club, with a first solo by Mr. W. P. Warner and an "A" licence qualification by Mr. R. J. Ralph.

CASTLE BROMWICH

The flying hours for the week ending July 12 were: Dual, 38 hr. 45 min.; and solo, 32 hr. 25 min. Cross-country flights were carried out to Sywell, Desford, Meir, Tollerton and Hatfield. New members include Mr. Cantrill.

IRISH AERO

A steady weekly average of about twenty-five hours, half of which is made up of solo work, is being maintained by the Irish Aero Club, who operate from Baldonnell Aerodrome. On one day each week an instructor flies over to Sligo to give instruction to the club there, which has a growing membership. A pageant is being organised for August 18, and this will be held in Phoenix Park.

CAMBRIDGE

Flying times for the week at Marshall's School were 17 hours dual and 16 hours solo. Two new members, Messrs. Wayman and Askeri, have joined the school, and Mr. L. Patterson has started dual instruction. Cross-country trips included charter flights to Chepstow and Nottingham for the races. Wing Com. de Waller also chartered the "Puss Moth" for a flight to Halton for polo.

HANWORTH

During last week seventy-seven hours' flying was carried out on club machines, and some useful cross-country flights made, including one by Mr. Llewellyn, who flew Lord Raten-done to Coventry to welcome H.R.H. the Prince of Wales at the Humber-Hillman works.

Lady Nelson, who is a private owner-member of Hanworth, returned from the Bonn Rally, bringing with her, in her Stinson, the Lord and Lady Mayoress of Bonn-on-Rhine.

NORFOLK AND NORWICH

Mr. J. Collier, the club instructor, was away last week on holiday, but in his absence Mr. A. Kirkby, the hon. assistant instructor, was kept busy every evening with pupils. During the week-end Mr. and Mrs. Cecil Gowing flew to Hatfield to witness the final of the King's Cup and to leave the machine with the De Havilland Aircraft Co. for its annual engine overhaul. Mr. A. J. S. Morris took a passenger to Portsmouth and back.

On the "Guests' Day," July 28, members and their guests will leave for Bacton in the afternoon by air and by car to picnic and bathe. Afterwards they will return to the club for a dance, which will commence at 8.30 and continue until midnight.

EGYPT

Work on the Misr Airwork's Dekheila clubhouse is progressing rapidly. There will be a main lounge, dressing rooms, a kitchen, and, in fact, every comfort.

LIVERPOOL

An Avro "Cadet" has now been added to the Liverpool Club's fleet, making a total of seven, which may be further increased in the near future if a new Pobjoy Klemm materialises. Last week the hourage totalled 86 at Hooton.

READING

Last week we inadvertently advanced the date of the Reading Aero Club's bathing party by a full fortnight. The party is arranged for Sunday, July 29. It can only be hoped that too many private owners did not attempt to qualify for the free lunch on such a comparatively cold day and to no purpose!

YORKSHIRE

A considerable reduction in the flying charges of the Yorkshire Aeroplane Club has been made—the lowest rate being 30s. an hour for solo flying by members of experience—and these new charges apply also to the use of the new "Puss Moth." Twenty-five hours were flown last week at Yeadon.

HATFIELD

It was an exceptionally short week, owing to the King's Cup Race, and, the aerodrome being invaded by visitors as well as by competing aircraft, the London Club could not put in as many hours as usual. The actual flying time for the week was 115 hours. However, on Thursday there were certain compensations in seeing the competing machines, and, of course, on Friday and Saturday there was the race itself.

WITNEY AND OXFORD

The clubhouse at Witney aerodrome is now completed and the bar opened. While Monday is "closing day," Universal Aircraft Services, Ltd., remain open, and will be able to service any machine landing. The "Avian" has been sold, and another Cirrus II "Moth" purchased to take its place, and this machine is at present being overhauled by U.A.S. Two new members have joined during the past fortnight, and a total of 51 hours flown, including a first solo by Mr. A. R. Brummitt.

CINQUE PORTS

On Friday last week No. 602 (Bomber) Squadron A.A.F. arrived at Lympne for their annual training camp. Teams taking part in the Folkestone Cricket Week, including the Australians, are co-operating with the club for the International Meeting on September 1 and 2.

Mr. W. E. Davis's visit to Sywell to look after that aerodrome in the absence of Tommy Rose was not in vain! Mr. Lipton, incidentally, who finished third in the King's Cup, is a club member.

Again this week fine weather was spoilt by high winds, but in spite of this the club managed 31 hours dual and 16 hours solo.

SCOTTISH

Two members of the Scottish Flying Club, Messrs. N. G. Dryburgh and K. Crawford, obtained their "A" licences during the week ending June 29, in which 93hr. 35min. were flown. Major J. B. Watson, accompanied by another member, Mr. R. R. Allen, who was acting as pilot, flew to Amsterdam for the week-end in the former's "Leopard Moth."

AIR SERVICE TRAINING

A number of new pupils arrived last month to take flying courses. An Indian, Mr. A. C. Gazdar, who is assistant instructor at the Bombay Flying Club, is taking the instrument-flying and instructor's courses, and Mr. R. S. Walker, the air correspondent of a well-known paper, is training for his "A" licence. Capt. T. Neville Stack, who is to fly in the Melbourne Centenary race, is taking a special instrument-flying course, and both Mr. S. N. Turner, who is an ex-pupil of the school, and Mr. J. E. Carberry have come from Kenya to take special courses.

An examining board for the ground engineer's "X" licence (parachutes) sat at Hamble during June, and the six A.S.T. candidates were all successful in obtaining their licences.

BROOKLANDS

Owing to weather improvements instructional hours have increased to 135 this week. Messrs. Dansie, Taylor, and Johnson made successful first solos, Miss Monro completed her "A" licence tests, and Mr. George Eyston renewed his "A" licence. Capt. Findlay carried out a night flight with Mr. Alington, who successfully passed the test for his "B" licence. Cross-country trips, under the supervision of the navigation instructor, Mr. Ashton, have been carried out to a number of aerodromes.

A rush of new members meant that flying has been started every morning at 8 o'clock, and the instructional side is being temporarily helped by F/O. Sholto Douglas, who is studying at Brooklands for his second-class navigator's examination. Capt. Davis has been at Sywell, while Tommy Rose was flying in the King's Cup.

Two Long Sailplane Flights

Starting from the Dunstable ground of the London Gliding Club last Sunday morning, Mr. G. E. Collins made a flight of some 32 miles to Hanworth aerodrome. He actually crossed the river Thames but was forced to turn back and land at Hanworth. He was flying his own "Rhön Adler," on which he has already made several long thermal flights.

Mr. P. Wills also used the thermal currents on that day to good effect, for he got as far as Abridge Aerodrome in Essex, about 35 miles, before finding it necessary to land. As he was flying his British designed and built, "Scud II," this was probably a record cross-country flight for a British sailplane.

Ireland This Year

The Irish Aero Club is organising an air display to take place at Phoenix Park, Dublin, on Saturday, August 18. Through the Royal Aero Club the I.A.C. sends a cordial invitation to British private owners and clubs. Prizes amounting to £200 will be offered for an arrival competition, in addition to a valuable challenge trophy which will go to the club whose representative wins the first prize.

Visitors by air will be the guests of the Irish Aero Club for the evening of the 18th, including hotel accommodation, and there will be free petrol for the return journey. Those interested are requested to send their names to the Irish Aero Club, 10, Pearse Street, Dublin, or to the Royal Aero Club, 119, Piccadilly, London, W.1.

"Les Douze Heures d'Angers"

Ten machines took part in the "12 Heures d'Angers" contest on Sunday, July 8. The course was triangular in shape and 25 miles long, beginning and ending at Avrille Aerodrome. The contest entailed a flight of twelve hours, during which time competitors flew for as great a distance as possible. Entries were limited to two-seater machines with engines of a maximum of 8 litres capacity. Lacombe was the winner, in a Caudron "Rafale." He flew 1,805 miles at 150 m.p.h. The second was Helene Boucher with 1,765 miles at 147 m.p.h., and third Arnoux, who covered 1,745 miles at 145 m.p.h., both in "Rafale" machines. A Miles "Hawk," a Percival "Gull," and a D.H. "Puss Moth" were among the entries.

SOUTHEND

In addition to the usual activities at the Rochford Aerodrome, members have been practising for the coming air race. Last Sunday the heats were flown to eliminate the large entry, and both the semi-final and the final will be flown next Sunday afternoon—the occasion of the Southend Flying Club's "At Home." Visiting pilots will be guests of the Club. In addition to other interesting flying events there will be another race over a fourteen-mile course for visiting machines, and for which Councillor Weber has presented a handsome cup. Those pilots wishing to compete should arrive at aerodrome before 3 p.m. and enter their names.

The first heat of the members' race on Sunday provided an exciting finish. Mr. Roper Brown, in the scratch "Cadet," made great efforts and was within a length of Pierce ("Gipsy Moth"), when the latter crossed the line to qualify with Garland (Avro "Cadet"), who won the second heat from scratch mark, for the finals.

NORTHAMPTONSHIRE

In spite of the fact that weather conditions have been by no means ideal for instruction, flying time for the week totalled 35 hours.

On Saturday, July 7, the Miles "Hawk" entered for the King's Cup by Capt. G. R. D. Shaw, the chairman of the club, was christened at Sywell by Mrs. Shaw. This machine was piloted by Flt. Lt. T. Rose, the chief instructor of the club, and worked through the field into second place—a magnificent effort.

During the week Mr. Charles Bennett, the well-known scenario writer, accomplished a first solo. The latter half has been very busy—partly owing to the enthusiasm of Mr. A'Bear, who has put in more than eight hours in less than two days. On one morning he was receiving instruction at 9 o'clock, although an air line machine had been forced down here owing to bad visibility—the clouds then being at 300 feet.

The Speaker of the House of Commons, the Rt. Hon. A. E. FitzRoy, heads the list of our new members for the week.

The Viceroy's Cup

The air race this year for the Viceroy's Challenge Trophy is to be held on December 15 and 16, and will be a handicap event. On the first day the course will be from Calcutta to Cawnpore, where the night will be spent, and on the second day competitors will fly from Cawnpore to Bombay.

The Portsmouth Trophy Race

On Saturday the "Round the Isle of Wight" air race, organised by the Portsmouth Aero Club, will be held. The course to be used will not be quite the same as last year, but will consist of two circuits of the Island, and there is likely to be an interesting finish at Portsmouth Airport. The Portsmouth Air Trophy race has been arranged for the same day, and the course for this will be quite local around the airport.

The entries so far received are as below. In the last column, "A" means that the pilot has entered for the Island race, and "B" that he has entered for the Portsmouth Trophy.

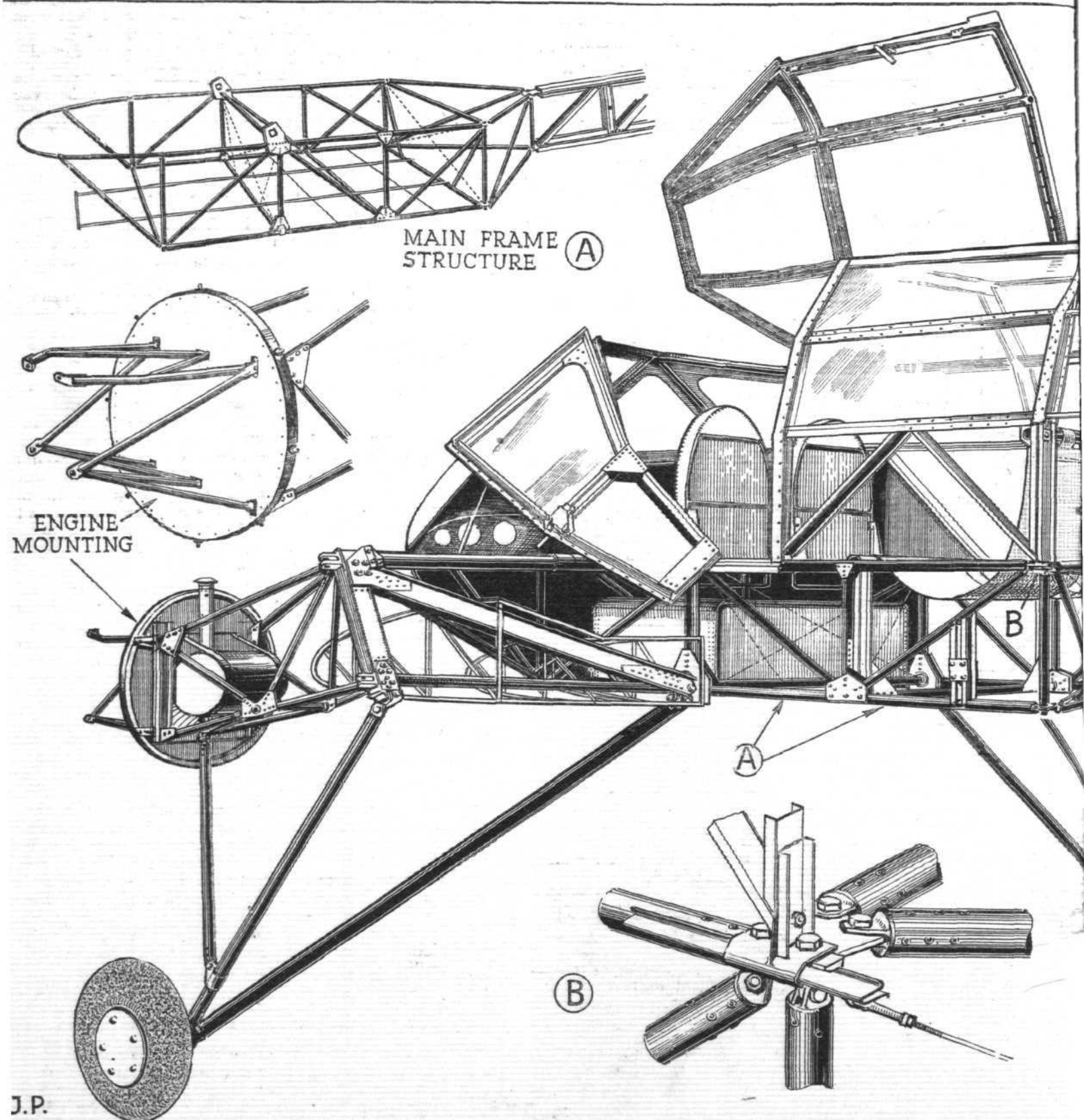
Entrant	Aircraft	Registration	Pilot	Race
C. Powis ...	Hawk Major...	—	C. Powis ...	A and B
E. W. Percival ...	Mew Gull ...	G-ACND	E. W. Percival	A and B
Flt. Lt. R. Pope ...	Comper Swift ...	G-ACML	Flt. Lt. Pope ...	A and B
Sr Derwent Hall Caine	Leopard Moth	G-ACHC	—	A
R. Holmwood ...	Moth Major ...	G-ACSA	R. Holmwood	A
Herts and Essex Aero Club.	Miles Hawk ...	G-ACTO	R. Frogley ...	A and B
Sir C. H. Rose ...	Miles Hawk ...	G-ACTE	Sir C. H. Rose	A and B
London Transport (Central Omnibuses) Sports Association Flying Club.	Moth ...	G-AAZE	D. Kinnear ...	A and B
S. B. Cliff ...	Miles Hawk ...	G-ACLI	S. B. Cliff ...	A and B
A. H. Cook ...	Comper Swift ...	G-ABWW	A. H. Cook ...	A and B
Mrs. H. M. Barnes ...	Miles Hawk ...	G-ACMH	V. N. Buchan	A
F. S. Cotton ...	Avro Avian ...	G-ABME	F. S. Cotton ...	A and B
F. Cameron ...	Leopard Moth	G-ACOO	F. Cameron ...	A and B

MONOSPAR "S.T. 10"

New Ideas About Fuselage Design Have Greatly Increased the Speed of This Latest Monospar Aeroplane and Enabled General Aircraft to Win the King's Cup

AERODYNAMIC interference and air stream flow over the fuselage are two factors which make an aeroplane designer's life difficult. Now that high-speed commercial aeroplanes are being built which must, if they are to be worth anything to operators, get their performance from a comparatively low total horse-power, both subjects are receiving great attention throughout the world.

Mr. H. J. Stieger, Managing Director of General Aircraft, Ltd., and the designer of the Monospar series of aeroplanes, formulated certain theories about body shape some little while ago and later these were corroborated by the findings of a Russian scientist. Encouraged by the success of his first machine, Mr. Stieger has incorporated these ideas in the "S.T. 10," with the result that the performance was



greater than the handicappers expected and the King's Cup came into his company's possession.

It is interesting to learn that although the cross-section of the fuselage has been increased by two square feet in the "S.T.10," the altered shape of the nose giving a better entry, particularly underneath, has resulted in an increase in speed of over 10 m.p.h. Part of this increase is due to an alteration in the fore and aft attitude of the machine during flight. These facts make the machine doubly interesting because it is one of the select few built for the ordinary user wherein the designer's ideas have resulted in beating the handicappers in a race.

The "S.T.10," as it flew in the race, has a fixed under-



IN THE OFFICE: Mr. H. J. Stieger, designer of the "S.T.10," and Managing Director of General Aircraft Ltd., is here standing in the cockpit of the machine before the race started. Seated is Flt. Lt. H. M. Schofield, General Manager and Chief Pilot of the company. He flew the "S.T.10" throughout the race. (Flight Photo.)

carriage, but nevertheless the two Pobjoy "Niagara" engines of only 90 h.p. each pull it through the air at 144 m.p.h. That speed, for only 45 h.p. per person, is no mean achievement, but the performance of the "S.T.11" will be even more spectacular. This will be the model with the retractable undercarriage and it will have an easy cruising speed of 150 m.p.h.

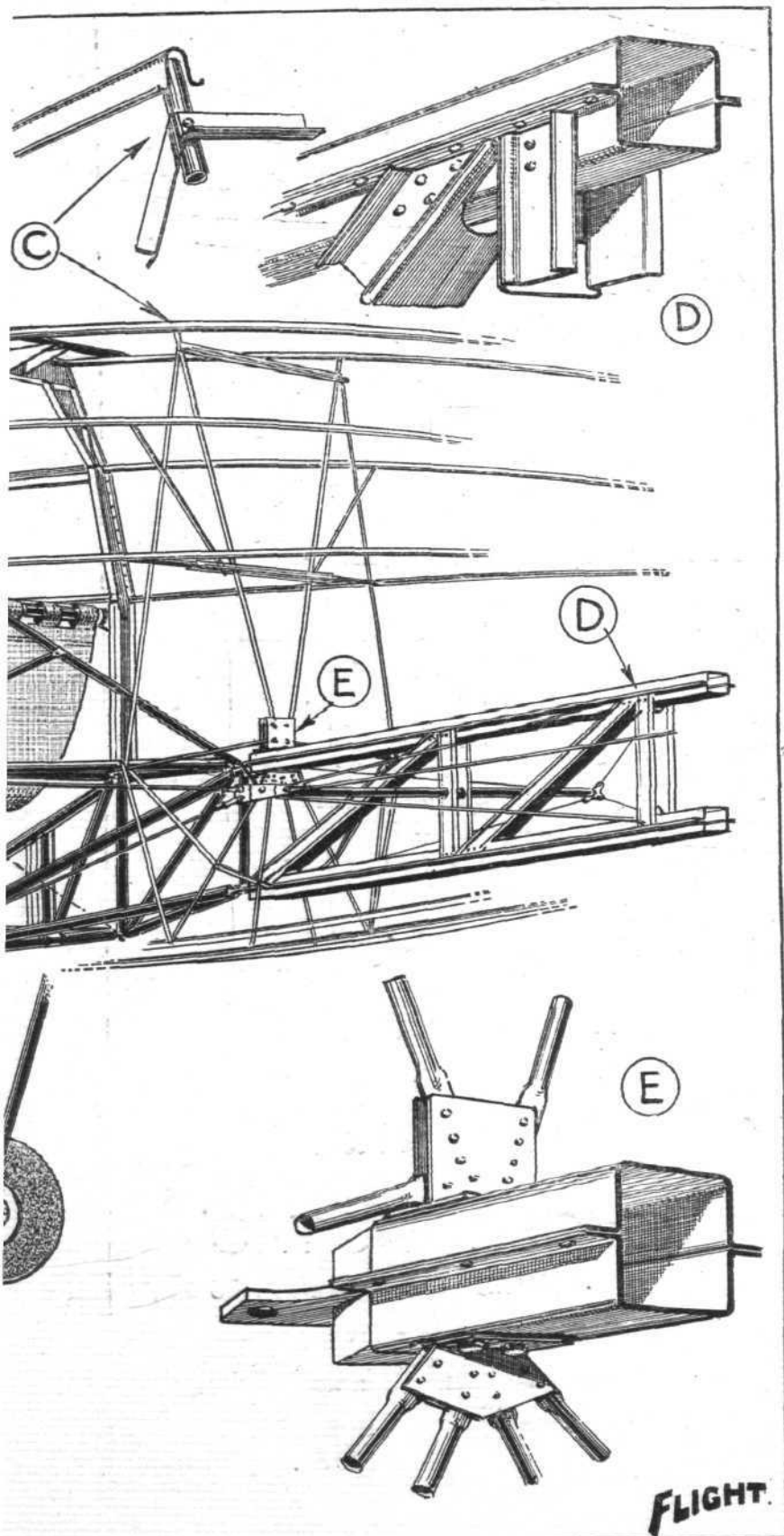
The cabin of both models is very light and airy and the windows, which extend right to the rear behind the passengers' seats, completely obviate any feeling the occupants might otherwise have of being shut in. Being a two-engined machine the outlook for the pilot is admirable, and it is worth noting that both Flt. Lt. Schofield and Mr. Gardner, who was flying an "S.T.6," were able to get through the bad weather which held up other people.

Structurally, the "S.T.10" does not differ very greatly from the "S.T.4," which was described in *Flight* for April 22, 1932.

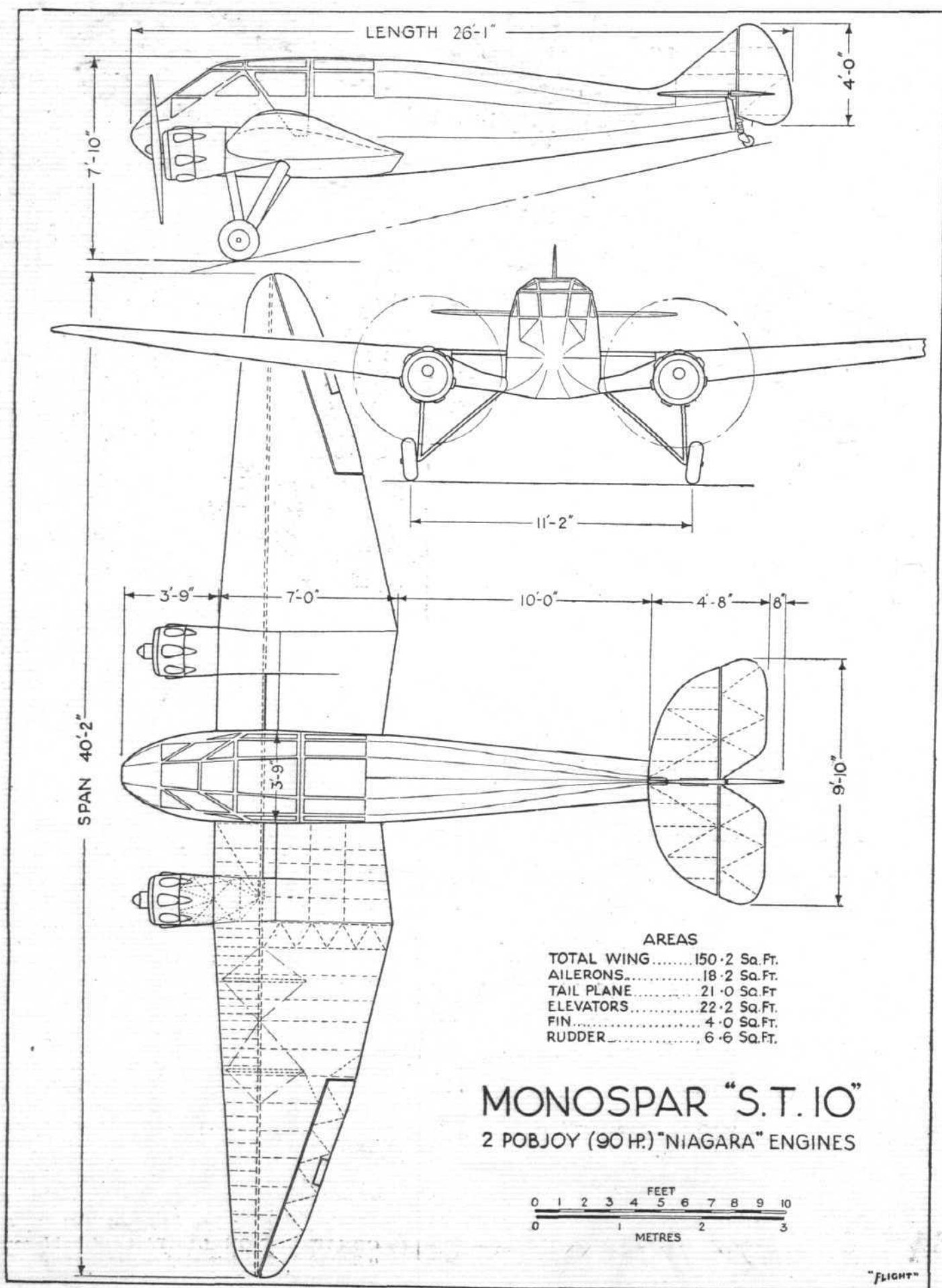
The Monospar arrangement of both the wings and the fuselage has, of course, been retained, but the latest model has a considerably deeper cabin with the passengers sitting higher in it, and the fuel is now carried in a tank beneath the floor. As much as possible of the whole structure is built up from steel tubes or drawn steel channels of various sections, and, naturally, the whole is assembled in jigs, so that replacement of any part is a simple matter. As our sketches show, the front portion of the fuselage is rather like a "hip-bath" of steel tubes. This forms the cabin and carries both the wings and the undercarriage. The rear portion is built up round a Monospar girder braced with kingpost and wire stays for torsional rigidity. The wing stubs are structures carrying the engines and the outer struts of the undercarriage, and form the fixed hinge for the outer sections of the wings, which fold inwards when the trailing edge flaps of the stubs are folded up.

The wings themselves are mainly built of steel and are covered with doped fabric. The single spar is a deep girder built up from strip steel drawn into

CONSTRUCTIONAL DETAILS of the Monospar "S.T.10." The lettering shows the parts of the main structure to which the small sketches refer. This new model has only one door to the cabin but the whole top opens up as well, making getting in and out a very simple and easy matter.



WINNER OF THE KING'S CUP, 1934



General arrangement drawing of the Monospar "S.T. 10," with two 90 h.p. Pobjoy "Niagara" air-cooled engines.



LANDING. The Monospar "S.T.10" landing at Hatfield. The new, complete cowling of the two Pobjoy engines is neat and clean. (Flight Photo.)

channel section and tapered heavily. It is a pure cantilever and is pin-jointed, for folding, to the spar which runs right through the fuselage and wing stubs. The leading edge is locked to the triangulated structure forming the front of the wing stub and carrying the engine mounting, when the wing is extended.

Throughout the whole machine duralumin and aluminium are used wherever weight can be saved without

a decrease in strength. For example, the whole of the cabin top is of light alloy, as is the structure over the rear portion of the fuselage which carries the fabric from behind the cabin to the tail.

Welding is not used and all joints are either riveted or bolted. This, of course, means more work in some ways, but Mr. Stieger maintains that strength for strength a lighter structure can be built with joints of this kind.

CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

GREAT BRITAIN AND THE DIESEL

[2943] In *Flight* of July 5th, on page 664, under the heading of "The Danger of Petrol," I note your disparaging comment on the progress of the heavy-oil engine in Great Britain.

As an enthusiastic student, of some years standing, of the design and development of the compression-ignition engine for aviation purposes, I join issue with you as to the accuracy and wisdom of these notes of yours on a most vital and important question.

First, in regard to the progress that has been made in Great Britain, outstanding heavy-oil engine research for aero engines, second to none throughout the world, has been carried out by Mr. Ricardo, and by the Royal Aircraft Establishment at Farnborough, while valuable work has been done on complete engines by the Armstrong Siddeley Company, the Napier Company, and the Bristol Aeroplane Company.

At the present time a proven and practicable British heavy-oil aero engine is in existence, and I venture to suggest that this engine is generally a more satisfactory proposition than any corresponding foreign compression-ignition engine.

So much for British initiative being behindhand on heavy-oil engine development.

I am entirely in agreement with you that the introduction of heavy-oil engines would practically eliminate the danger of fire, but I do not feel you should lead your readers to think that the reason why the heavy-oil engine is not more generally used for aviation purposes is lack of British enterprise, because actually the facts are that the "state of the art" on heavy-oil engine development precludes its being used in considerable quantities for military aircraft.

Without going into technical details, the explanation of why this is so is because we are getting 27 h.p. per litre for take-off from the petrol engine to-day, and can expect a considerable increase in output per litre in the near future, while the very best we can hope for from a two-stroke heavy-oil engine is 24 h.p. per litre, and 21 h.p. per litre from the corresponding four-stroke type.

Further, fuel consumptions of petrol engines have so much improved of late that the compression-ignition engine would not "come into its own" under a range of a thousand miles. This obviates the use of heavy-oil engines for military purposes

for many years to come, except for certain types of machines where the highest performance is not necessary, or when operating in districts where it is not possible to employ high octane leaded fuels.

The heavy-oil engine is undoubtedly of vital importance to civil aviation, and it is quite possible that catapulting of mail carrying aircraft, using heavy-oil engines, may be the ultimate solution of getting machines into the air with low take-off power, and, at the same time, being able to take advantage of the low specific cruising consumption.

The Bristol Aeroplane Co., Ltd. A. H. R. FEDDEN.

Mr. Fedden has misunderstood our intentions. What we criticised was the small use being made of the Diesel engine in this country; we have no fault to find with the technical progress.—Ed.

HULL-AMSTERDAM AIR MAILS

[2944] I am directed by the Postmaster-General to say that his attention has been drawn to an article which appeared under the heading "Air Mail Service" in the issue of *Flight* dated July 5, in which it is suggested that the Post Office should utilise the Dutch Air Service between Hull and Amsterdam for the conveyance of air mails.

I am to inform you that this service has been used for the conveyance of air mails between Hull and Amsterdam in both directions since the date of its introduction; and the Postmaster-General feels sure that you will be prepared to take such steps as may be possible to correct any wrong impression which may have been caused by the article in question.

The Hull service offers no advantage for air correspondence from southern localities, and at most places in the north of England its use would offer no advantage at all, or but slight advantage, as compared with the air services, including the Dutch services, from Croydon. For that reason the service in the outward direction has been restricted to air correspondence posted in the area served from the Hull Post Office, but the possibility of extending it to places in the immediate vicinity of Hull is under consideration. F. H. WILLIAMSON.

General Post Office,
London, E.C.1.

COMMERCIAL AVIATION

— AIRLINES — AIRPORTS —

CROYDON

*Some Olley Charters : Air Services Run to Time Nowadays : Telephony versus Telegraphy :
The First D.H. 86 : Aircraft Noise : To Liverpool via Amsterdam*

PEOPLE sometimes expect thrills in these notes just because they deal with aviation, whereas nothing is less thrilling than air travel to-day. Machine after machine, fully loaded with passengers, departs or arrives with monotonous regularity. It is difficult enough to find incidents, let alone thrills.

The most varied experiences fall to the lot of those who do not cater for regular air travel. Olley Air Service, Ltd., for example, has catered for the many different kinds of flying recently. A flight from Croydon to Baden-Baden, for instance, with a couple of hours there whilst a client lunched and talked business. The whole journey was covered between 8 a.m. and 8 p.m. A Smithfield butcher gave his staff of ten their annual outing, and Olley Air Services flew the party round by Chatham, Dover, Brighton, Cowes—for bathing and lunch—Salisbury, Guildford, and so home to Croydon. Another trip was from Newmarket to Carlisle for the races, with a peer who rode in a race and then flew back. There was an American party, too, determined to see Land's End. They were picked up from their ship at Plymouth, flown around Devon and Cornwall, and then, via Barnstaple and Bristol, brought along to Croydon. They are, incidentally, starting on a trip round Europe next week with the same charter company.

Two incidents last week show that air transport has definitely reached the strict timetable stage. Princess Payley from Elstree flew to Croydon in a light aeroplane to catch the 6.30 p.m. Imperial for Paris. Still in the air when the half-hour struck, she saw the big machine move slowly away from the tarmac. Another film star, "Buster" Keaton, arrived a minute too late for the Imperial Airways 9.30 a.m. departure for Paris on Friday. He waited philosophically until the 12.30 p.m. departure. In the bad old days photographic agencies despatching Press photos abroad were the worst people for holding up aircraft departures. The various companies eventually agreed to wait for them as long as they liked—at £1 per minute. That effectually prevented the despatch rider from arriving at the actual departure time.

So heavy is the traffic to Cologne—formerly a very poor line—this summer that *Scylla* seems to have been placed more or less permanently on that route.

Week-end passengers to Le Touquet are evidently more dressy than most. The other day six passengers by Olley Air Service occupied one "Diagon," whilst another, with twenty-four pieces of their baggage, followed them.

Some of the old air line pilots tell me that the air is becoming very congested in these days. Both Provincial Airlines and Wrightson and Pearce run early morning newspaper services to Paris, and Hillman activities, too, have to be taken into account. The newcomers all use wireless—wisely, of course, but not always too well. Hence the fact that it is becoming increasingly difficult to deal with all the traffic in the air at one time when weather conditions make almost continuous communication between machine and ground station

essential. The answer seems to be the abolition of telephony. Those who have abolished it swear by telegraphy. Those who have not, cling firmly to the new-old method. It is useless to argue, but the Germans used telegraphy all along, and now nothing would induce the Dutch pilots to go back to telephony. *Verb. sap.*

On Friday last Capt. Wilcockson flew the first D.H.86 to Paris. The only fault found with this type is, apparently, a tendency to bounce over rough surfaces, a matter easy enough to put right.

The English are a curious race. Various companies here are continually receiving complaints about the noise of aeroplanes from people who live close to the aerodrome. Probably Imperial Airways, Ltd., get fewest, for their four-engined machines are quiet enough. However, foreigners cannot understand these complaints. People abroad who deliberately live next door to an airport expect noise. Actually, Nature—human nature at any rate—abhors a novelty. There was the same outcry about trains and motor cars, and the complaints ceased as soon as people became accustomed to them. It is the novelty of noise from a new quarter that worries people, and not simply noise alone, and this fact was quite unconsciously illustrated by a letter recently published in a leading newspaper.

"Sitting in a garden, we quite realise that the noise of traffic on the road must be patiently endured, but now that aeroplanes are flying so much lower . . . Why must road traffic noise be endured patiently and air traffic noise impatiently? The traffic of the air is surely as vitally important.

Incidentally, aeroplanes are flying higher now, but their size causes people in gardens to imagine that they brush the tree tops.

"Air France" are to be congratulated on the smart appearance of the passenger cars with the house flag flying on the wing, and on the neat grey uniform of the drivers under their smart dust coats.

The K.L.M. Manager at Croydon, under whose charge the Hull and Liverpool services come, tells me that the quickest way to reach those northern stations from Croydon is by air to Amsterdam, to connect with the Liverpool service. He can leave Croydon at 9 a.m., have a couple of hours in Amsterdam, and reach Hull at 3.30 or Liverpool at 4.40 p.m.

"Timber" Woods, of Surrey Flying Services, Ltd., left Croydon one morning last week to help the Leicester police to catch a "mock" motor bandit, using wireless between the aeroplane and police cars on the road. In this particular case the car had a white roof. "Timber" says that once you have spotted the car from the air (and this is the catch!) there is absolutely no escape for the banditti. Finally, the chase ended when police cars drew across the road in front of the "bandits." The sustained and indignant hooting of the other traffic held up, was perfectly reproduced through the wireless headphones in the aeroplane some thousands of feet up.

A. VIATOR.

IN AMERICA

ALTHOUGH several new and important types have appeared on the American air routes since the table, reproduced on the opposite page, was compiled by the Air Ministry, it will be found, nevertheless, to be interesting. A number of machines owned by the U.S. transport companies are registered, too, in foreign countries, so the table is incomplete.

Large orders for such machines as the Douglas "Airliner" and the Lockheed "Electra" will since have tended to give the "machine" column a rather more uniform appearance,

but, in January of this year, when the information was obtained, the types operated by the separate countries appear to be as diverse as possible.

It is worth noting that the average commercial payload works out at 2.3lb. per h.p., the average cruising speed at 131 m.p.h.—high, but not as high as most people imagine—and the average h.p. per machine at 719. Pan-American Airways Inc. owned no fewer than 194 machines, 121 of which were either amphibians or flying boats.

AIRLINE EQUIPMENT IN AMERICA

Company. No. and Make of Machines.	Passengers	All-up Weight	Maximum Commercial Pay Load	Operating Cruising Speed	No. Engines	Total H.P.	Company. No. and Make of Machines.	Passengers	All-up Weight	Maximum Commercial Pay Load	Operating Cruising Speed	No. Engines	Total H.P.
		lb.	lb.	m.p.h.					lb.	lb.	m.p.h.		
ALASKA AIR EXPRESS, INC.							NORTHWEST AIRWAYS, INC.						
1 Lockheed Vega 5C.	7	4,750	1,400	155	1	420	8 Hamilton, H.47.	6	5,750	1,200	120	1	525
ALASKA SOUTHERN AIRWAYS, INC.							2 Sikorsky, S.38 C. (Amp.)	9	10,480	1,800	110	2	840
1 Lockheed Vega 5B.	6	4,500	1,200	150	1	420	2 Waco, 300.	0	2,600	400	100	1	330
AMERICAN AIRWAYS, INC.							1 Waco, J.Y.M.	0	2,600	400	100	1	330
8 Stearman, C.3 M.B.	2	2,754	400	100	1	220	1 Fokker, Sup. Universal.	5	5,550	1,000	118	1	420
7 Ford, 5 A.T.C.	13	13,500	2,600	112	3	1,260	1 Stearman, C.3 B.	2	2,700	400	110	1	220
9 Ford, 5 A.T.B.	13	13,500	2,400	112	3	1,260	3 Ford, 5 A.T.C.	13	13,500	2,600	112	3	1,260
2 Stinson, S.M.I.D. 300.	3	4,500	600	105	1	330	2 Travel Air, A.6000 A.	5	5,250	1,000	118	1	420
25 Stinson, S.M.6000 B. Mail Pass.	10	8,600	2,000	115	3	645							
1 Stinson, Jr.	3	3,265	600	105	1	215	NORTHERN AIR TRANSPORT, INC.						
17 Stinson, U.	10	9,300	2,000	129	3	720	1 Stinson, S.M. 1F.	5	4,300	1,000	115	1	330
1 Stinson, S.M.6 B.	6	5,350	1,200	120	1	420	1 Stinson, S.M. 8A.	2	5,600	400	104	1	215
9 Stearman, 4C.M.1.	0	4,067	950	115	1	330	1 Bellanca Pacemaker (S. plane) .	5	4,300	1,000	125	1	330
5 Lockheed Orion, 9 B.	6	5,400	1,200	190	1	550							
8 Curtiss Wright Condor, T.32.	15	16,800	3,000	145	2	1,350	PACIFIC ALASKA AIRWAYS, INC.						
2 Pitcairn, P.A.6.	0	3,000	900	110	1	220	1 Waco, A.S.O. (S. plane)	2	2,600	400	100	1	220
1 Bellanca, C.H.300 Pacemaker.	5	4,300	1,000	125	1	330	5 Fairchild, 71.	6	5,500	1,200	106	1	420
14 Pilgrim, 100 A.	9	7,750	1,800	118	1	575	1 Consolidated Fleetster, 17 A.F.	6	5,300	1,200	153	1	575
4 Pilgrim, 100 B.	9	7,750	1,800	118	1	575	1 Stearman, C.3 B. (S. plane)	2	2,700	400	110	1	220
2 Sikorsky, S.38 C. (Amp.)	9	10,480	1,800	110	2	840	1 New Standard, D.25.	4	3,345	800	95	1	220
							1 Stinson, S.M. 2 AB. (Amp.)	3	2,500	600	90	1	220
BOEING AIR TRANSPORT, INC.													
2 Boeing, 80 Special.	12	17,500	2,400	112	3	1,350	PACIFIC AIR TRANSPORT, INC.						
9 Boeing, 80 A.1.	15	17,500	3,000	115	3	1,575	8 Ford, 5 AT-D.	14	13,500	2,800	122	3	1,260
8 Boeing, 40, B.4.	4	6,510	800	110	1	525	6 Boeing, 40 B.4.	4	6,080	800	110	1	525
11 Boeing, 40 B.	2	6,079	400	118	1	525	7 Boeing, 247.	10	13,100	2,000	165	2	1,100
2 Boeing Monomail 221 A.	7	8,000	1,400	137	1	575							
11 Boeing, 247.	10	13,100	2,000	165	2	1,100	PACIFIC SEABOARD AIR LINES.						
BOWEN AIR LINES, INC.							3 Bellanca, C.H. 300 Pacemaker. .	5	4,300	1,000	125	1	330
1 Detroit Vega, D.L.1.	6	4,500	1,200	150	1	420	PAN-AMERICAN AIRWAYS, INC.						
3 Lockheed Vega, 5 C.	7	4,750	1,400	155	1	420	1 Stearman, C.3 B.	2	2,700	400	110	1	220
2 Lockheed Orion, 9.	6	5,400	1,200	180	1	420	3 Sikorsky, S.38 A. (Amp.)	8	10,000	1,600	110	2	840
BRANIFF AIRWAYS, INC.							13 Sikorsky, S.38 B. (Amp.)	8	10,480	1,600	110	2	840
5 Lockheed Vega 5 C.	7	4,750	1,400	155	1	420	2 Sikorsky, S.41 B. (Amp.)	12	13,800	2,400	115	2	1,150
EASTERN AIR TRANSPORT.							3 Sikorsky, S.40 (F. Boat)	40	34,000	8,000	117	4	2,300
8 Pitcairn P.A-7M.	0	3,050	550	140	1	250	3 Ford, 5 AT-B.	12	13,500	2,400	112	3	1,260
1 Pitcairn P.A-6.	0	3,000	500	110	1	220	6 Ford, 5 AT-C.	13	13,500	2,600	112	3	1,260
4 Pitcairn P.A-8.	0	4,000	550	130	1	330	3 Ford, 5 AT-D.	14	13,500	2,800	122	3	1,260
7 Stinson, SM-6000 B.	10	8,600	2,000	115	3	645	8 Consolidated "Commodore 16,"	16	17,600	4,400	104	2	1,150
1 Stinson Airliner Model "U"	10	9,300	2,000	129	3	755	1 Type 1 (F. Boat)	22	17,600	4,400	104	2	1,150
8 Curtiss Wright Condor T.32.	15	16,800	3,000	145	2	1,350	1 Consolidated "Commodore 16,"	16	17,600	4,400	104	2	1,150
5 Curtiss "Condor Transport"	18	17,378	3,600	116	2	1,200	1 Type 2 (F. Boat)	30	19,200	6,000	104	2	1,150
11 Curtiss-Kingbird D.2.	6	6,115	1,200	120	2	660	1 Pilgrim F.C.2.	4	4,600	800	100	1	220
HANFORD-RAPID AIR LINES.							1 Pilgrim 71.	6	5,500	1,200	120	1	420
1 Lockheed Vega 5 C.	7	4,750	1,400	155	1	420	1 Fairchild F.C-2W2.	5	4,600	1,000	120	1	450
1 Lockheed Vega.	5	4,500	1,000	150	1	330	1 Fairchild 22 C.7 A. (S. plane) .	1	1,520	238	98	1	95
1 Bellanca CH.300 Pacemaker.	5	4,300	1,000	125	1	330	1 Fairchild 71.	6	5,500	1,200	106	1	450
1 Curtiss Robin C.1.	2	2,600	400	102	1	185	1 Curtiss "Falcon"	0	3,949	270	125	1	575
1 Waco R.N.F.	2	1,938	400	90	1	125	1 Lockheed Vega 5 B.	6	4,500	1,200	150	1	420
2 Travel Air 2000.	2	2,100	400	90	1	90	1 Consolidated Fleetster 20 Type	5	5,900	1,000	148	1	575
1 Travel Air 3000.	2	2,300	400	95	1	150	PENNSYLVANIA AIR LINES, INC.						
1 Travel Air 6000.	4	4,100	800	107	1	220	1 Pitcairn P.A.7 M.	0	3,050	550	140	1	250
1 Travel Air S.6000-B.	5	4,230	1,000	110	1	330	2 Ford 5 AT-B.	12	13,500	2,400	112	3	1,260
1 Stinson Jr. S.	3	3,265	600	105	1	215	3 Ford 5 AT-C.	13	13,500	2,600	112	3	1,260
2 Stearman C.3 R.	2	2,754	400	100	1	250	1 New Standard D.27.	0	3,400	800	95	1	220
1 Sikorsky S.38B. (Amp.)	8	10,480	1,600	110	2	840	4 Stinson SM-6000 B.	10	8,600	2,000	115	3	645
INTER-CITY AIRLINES, INC.							STAR AIR SERVICE, INC.						
2 Travel Air S.6000 B.	5	4,230	1,000	110	1	330	2 Bellanca CH.300 Pacemaker.	5	4,300	1,000	125	1	330
1 Fleet 2.	1	1,580	200	90	1	100	2 Curtiss Robin C.1.	2	2,600	400	102	1	185
1 Monocoupe 90.	1	1,519	200	100	1	90	1 Fleet de Lux.	1	1,580	500	90	1	125
1 Waco, U.I.C.	3	2,800	600	125	1	210	TRANSCONTINENTAL AND WESTERN						
INTER-ISLAND AIRWAYS, LTD.							Air, Inc.						
3 Sikorsky S.38 C. (Amp.)	9	10,480	1,800	110	2	840	11 Ford 5 AT-B.	12	13,500	2,400	112	3	1,260
INTERSTATE AIRWAYS, INC.							5 Ford 5 AT-C.	13	13,500	2,600	112	3	1,260
1 Fleet, 1.	1	1,578	200	90	1	125	4 Fokker AF-X. A.	12	13,100	2,400	120	3	1,260
1 Fleet, 2.	1	1,580	200	90	1	100	1 Fokker XIV.	8	7,200	1,600	120	1	525
1 Ryan, B.1.	4	3,300	800	108	1	220	2 Lockheed Orion 9E.	16	5,200	1,200	180	1	550
1 New Standard, D.25.	4	3,345	800	95	1	220	1 Stearman C.3 B.	2	2,700	400	110	1	220
KOHLER AVIATION CORP.							8 Stearman Alpha 4 A.	0	3,500	400	120	1	450
4 Loening, C.2 C. (Amp.)....	6	6,250	1,200	100	1	525	7 Consolidated Fleetster 20 A.	5	5,900	1,000	148	1	575
MAINE AIR TRANSPORT CO., INC.							1 Detroit Vega, D.L.1 B.	6	4,500	1,200	150	1	450
1 Pilgrim, 71.	6	5,500	1,200	120	1	420	2 Detroit Vega, D.L.1.	6	4,500	1,200	150	1	450
5 Fairchild, 71.	6	5,500	1,200	106	1	420	UNITED STATES AIRWAYS, INC.						
MIDWEST AIRWAYS, INC.							1 Metal G.2 H.	6	6,000	1,200	115	1	525
2 Ryan, B.5.	5	4,000	1,000	112	1	330	4 Metal G.2 W. Flamingo.	6	5,800	1,200	112	1	450
1 Moth, 60 G.M.	1	1,650	200	83	1	85	VARNEY AIR LINES, INC.						
2 Fleet, 1.	1	1,578	200	90	1	125	1 Waco Q.C.F.	2	2,200	400	124	1	165
1 Buhi Flying Bull Pup, L.A.1.	0	850	200	78	1	45	4 Lockheed Orion 9.	6	5,400	1,200	189	1	450
NATIONAL AIRWAYS, INC.							2 Sikorsky S.39 B. (Amp.)	4	4,000	800	100	1	300
3 Stinson, S.M.6000, Airliner.	10	8,600	2,000	115	3	645	WESTERN AIR EXPRESS.						
NATIONAL AIR TRANSPORT.							2 Boeing 95.	0	5,840	900	120	1	525
10 Boeing, 95.	0	5,840	900	120	1	525	1 Stearman 4 E.	2	3,936	400	140	1	420
5 Ford 5 A.T.C.	13	13,500	2,600	112	3	1,260	6 Fokker Super Universal.	5	5,550	1,000	118	1	420
2 Boeing 40-B.	2	6,079	400	118	1	525	5 Fokker A.F.X-A.	12	13,100	2,400	120	3	1,260
2 Boeing 40 B.4.	4	6,080	800	110	1	525	1 Boeing 40 B-4.	4	6,510	800	110	1	525
7 Boeing 247.	10	13,100	2,000	165	2	1,100	WEDELL-WILLIAMS AIR SERVICE						
NATIONAL PARKS AIRWAYS, INC.							Corp.						
2 Stearman, C.3 B.	2	2,700	400	110	1	220	3 Lockheed Vega 5 C.	7	4,750	1,400	155	1	420
4 Fokker-Sup. Universal.	5	5,500	1,000	118	1	420	WYOMING AIR SERVICE, INC.						
2 Boeing, 40 B.4.	4	6,080	800	110	1	525	2 Stinson SM-8A.	2	3,195	400	104	1	215
							2 Stinson Junior "S"	3	3,265	600	105	1	215

HESTON

B.A.N.Co.'s Deauville Service : "A Meal in Every Country" : Belgian Pilots Entertained : Wrightson's New "Vellox"

THE British Air Navigation Company's summer service to Deauville was inaugurated last Thursday. The service leaves Heston every day, including Sundays, at 11 a.m., arriving at Deauville at 12.30 p.m., leaves on the return flight at 3, and arrives again at Heston at 4.30. The opening flight was made in B.A.N.Co.'s Ford "Trimotor," G-ABHO, with Mr. T. N. Morton at the controls.

The Le Touquet service was working harder than ever during the week-end of July 7, and more than seventeen round trips were made. The Dieppe-Pourville service was also operating, and promises well. During the week-end alone B.A.N. Co. flew ninety-five passengers between Heston and the Continent, and handled 174 passengers in all.

The Portsmouth, Southsea and Isle of Wight Aviation has been operating to capacity, and, indeed, called in their London agents, B.A.N.Co., to accommodate a considerable overflow in two "Dragons," a "Gull," and the Avro "Commodore"—which is that company's latest purchase.

Heston's new telephone number, Hounslow 2345, was brought into action at 9 a.m. last Saturday.

The repairs to Lord Londonderry's Avro "Cadet" are progressing in the Airwork workshops, where they have wide experience in repairing metal machines. A. V. Roe and Co., the makers, have expressed approval of the work already carried out on the fuselage, which has been straightened and welded. A pair of Airwork spats were fitted overnight to Prince Kinsky's new "Leopard Moth," and he was able to leave for the Continent early the next morning. Prince Kinsky, who is the President of the Austrian Aero Club, and well known in England, is very often seen at Heston.

An interesting story of the return from the Bonn week-end is that of Mr. Gerard d'Erlanger's party, which left on Sunday evening. At 4.30 p.m. they were sitting in a restaurant

some way out of Bonn. Exactly four hours later they were in the restaurant at Heston. Between tea and dinner they had returned to Bonn, packed, driven to the Cologne airport, and covered the 350 miles to their home airport. "A meal in every country" may well become the slogan of really progressive European tourists.

About a dozen Belgian pilots were entertained to lunch at Heston by the Royal Aero Club Hospitality Committee on July 7. This follows close upon their entertainment of German visitors for the R.A.F. display. A valuable aid to such gatherings has been provided by Lord Wakefield, who has presented a large supply of aviation maps to be loaned to foreign visitors entertained by the Committee. These maps are issued by the Committee, and are returned to the traffic staff at Heston when the visit is over.

The popularity of the D.H. "Leopard Moth" has led to the purchase of a second by Wrightson Air Hire, whose comprehensive stock is being increasingly used by pilots who are unable to afford the outlay and expense of buying and running an aeroplane of their own. Wrightson and Pearce, too, are expecting delivery of their new Vickers "Vellox" freight machine towards the end of the month. This will be the first air freighter to use Heston as its base. Converted passenger machines have hitherto carried out all work of this nature. The "Vellox" is to be fitted with two-way radio, and will be used principally for the daily contract flight with newspapers to Paris, leaving Heston in the small hours of the morning.

Several Heston pupils have recently taken the blind-flying certificate, which is issued by Airwork to pupils who have completed their instrument-flying course and passed the "blind" navigation test on a triangular fifty-mile circuit. Mr. Brian Davy is the instrument-flying specialist on the Airwork school staff.

Long Island to Wall Street

On Monday a seaplane service between Long Island and East River, New York, was inaugurated, and will be run four times daily in each direction. Two rafts have been arranged, with waiting rooms and ticket offices, on the river.

An Irish Air Line

Everson Flying Services, who have had quite a busy time recently with charter trips to various parts of Ireland, are negotiating with the Free State Government for permission to use either Ballincollig or Fermoy aerodromes for a regular service which is to be started shortly. This will be run twice weekly between Dublin and Cork.

Manchester's Airport

It appears that the Airport Committee has definitely recommended the construction of a new airport at Ringway, which lies on a line, and about half-way between Altrincham and Wilmslow, on the south-west side of Manchester. For the present, Barton will not be extended, but will be treated as a secondary aerodrome.

The new landing area should provide runways of approximately 1,200 yards in length—against the 600 yards at Barton—and is far enough outside the city area to be free from local fogs.

Canadian Airways

We learn that Canadian Airways, Ltd., owing to the urgent need for economy, has transferred its offices from Montreal to Winnipeg—the original headquarters of Western Canada Airways.

C.A., Ltd., have been extremely unlucky recently. Two years ago they held the air mail contract and arranged their business to suit, so that when the night prairie air mail was cancelled they suffered considerable losses. Actually the company held a four-year contract and were cut off, so to speak, without warning after two years' successful operation.

At present Canadian Airways are concentrating on the transportation of men and supplies to frontier posts.

A Cunard Experiment

A D.H.86 "Delphinus" was chartered from Imperial Air ways recently by the Cunard Steamship Company. She was used to meet the *Aquilania* on her arrival at Cherbourg and to fly passengers through Europe to Paris, Zurich, Munich, Vienna, and Budapest—so reducing the time of their journey by at least 24 hours.

Hillman's Belfast Service

This week Hillman's Airways opened their new air line to Belfast, taking the place of that previously run by Midland and Scottish Air Ferries, Ltd.

At present the service is operated once daily in each direction, with a time-table as follows: King's Cross Coach Station, 8.45 a.m.; Stapleford Abbots (Hillman's new airport), 10 a.m.; Speke (Liverpool), 11.45 a.m.; Castletown (I.O.M.), 12.45 p.m.; Aldergrove, 1.45 p.m.; and the Grand Central Hotel, Belfast, 2.25 p.m. The return journey starts from Belfast at 2.20 p.m. and Aldergrove at 4 p.m., reaches Hillman's airport at 7.45 p.m., and London at 8.45 p.m.

D.H. "Dragons" are used, though as soon as Hillman's Airways take delivery of their new D.H.89's with two Gipsy Six engines, these will replace the "Dragons."

A 180 m.p.h. Mexican Service

From Varney Speed Lines we learn that Lineas Aereas Occidentales, S.A., use five Lockheed "Orions," powered with "Wasps," supercharged for the high altitudes near Mexico City, on their daily 1,800-mile run from Los Angeles. These machines carry a pilot, six passengers, 150 lb. of baggage, and 100 lb. of mail, and operate at a cruising speed of 180 m.p.h., so that the route is covered in ten flying hours.

The L.A.O. is owned by Mr. Walter Varney, who was the first private air operator in the U.S.A., and the pioneer of "every hour on the hour" high speed services. One of the machines used, *West Wind*, holds the transport record between San Francisco and Los Angeles at 263.07 m.p.h., and is Varney's entry for the MacRobertson. This particular "Orion" is now in Europe.

THE ROYAL AIR FORCE



"OVERSTRANDS" FOR THE R.A.F.

A substantial order has been placed with the Boulton and Paul firm for a number of "Overstrand" day bombers, each with two "Pegasus" engines, for the Royal Air Force.

FLEET AIR ARM

No. 810 (Fleet Torpedo-Bomber) Squadron embarked in H.M.S. *Courageous* on June 25, 1934, from the Royal Air Force Base, Leuchars.

R.A.F. AIRCRAFT IN CANADA

The five "Fury" aircraft of No. 1 Squadron, R.A.F., which have taken part in the centennial celebrations at Toronto, were to carry out the following programme:

July 10.—Leave Hamilton, 10 a.m., for St. Catharines; leaves St. Catharines, 4 p.m., for Hamilton.

July 11.—Leave Hamilton, 10 a.m., for Camp Borden.

July 13.—Leave Camp Borden, 10 a.m., for Trenton; leave Trenton, 3 p.m., for Ottawa.

July 15.—Leave Ottawa, 10 a.m., for Montreal.

July 18.—Leave Montreal, 10 a.m., for Quebec.

July 20.—Leave Quebec, 10 a.m., for Montreal to be dismantled.

A transport aircraft of the Royal Canadian Air Force will accompany the flight to carry mechanics and baggage.

THE MOHMANDS OPERATIONS

In connection with the military operations against the Upper Mohmands on the North-West Frontier of India, period July-October, 1933, the names of the following have been brought to notice by H.E. the Commander-in-Chief in India:—

ROYAL AIR FORCE.—Group Capt. B. E. Sutton (now Air Commodore), D.S.O., O.B.E., M.C., No. 1 (Indian) Group Flying Off. (now Flt. Lt.) R. J. O. Bartlett, No. 20 Squadron. Rowe, No. 508932 Leading Aircraftman, T.A., No. 20 Squadron.

D.F.M.—The King has been graciously pleased to approve of the follg. reward in recognition of gallant and distinguished service rendered in connection with operations against the Upper Mohmands during the period July-October, 1933:—

Awarded the Distinguished Flying Medal.—506742 Leading Aircraftman T. I. Bowen.

NEW DIRECTOR OF THE NAVAL AIR DIVISION

Capt. H. C. Rawlings, D.S.O., is relinquishing the post of Director of the Naval Air Division at the Admiralty, which he has held since 1929. He will be succeeded by Capt. C. F. Ferris, who has served on the aircraft carrier *Eagle* and also at the Air Section at the Admiralty.

ANTI-GAS TRAINING

As a result of an extensive investigation, it has been shown that no disability other than lachrymation is produced by chloroacetophenone (C.A.P.).

The concentrations of this gas produced in fitting respirators or during training are not sufficient to cause any damage to the respiratory system even when personnel remain in such an atmosphere for prolonged periods. The eye irritation produced by the concentrations used may occasionally last about one hour, but even this is unusual.

CALSHOT YACHT CLUB

The second annual regatta of the Calshot Yacht Club will take place on Saturday, July 21, 1934, at the R.A.F. Base, Calshot. Full particulars can be had on application to the Hon. Secretary, Calshot Yacht Club, at the above unit.

MOVE OF No. 111 (FIGHTER) SQUADRON

No. 111 (Fighter) Squadron will move from Hornchurch to Northolt in July, 1934. The move is to be completed by July 15.

CRANWELL

The "passing out" inspections of the Royal Air Force College and Electrical and Wireless School will be held on Friday, July 27, and Wednesday, July 25, respectively. Except in cases of emergency no aircraft from any other station is to fly within two miles of Cranwell or to land at Cranwell aerodrome on these dates.

THE R.A.F. BENEVOLENT FUND

At the usual meeting of the Grants Committee of the above Fund held at Iddesleigh House on July 12 last, Mr. W. S. Field was in the chair, and the other members of the Committee present were Mrs. L. M. K. Pratt Barlow, Air Com. Drew, and Mrs. Vesey Holt. The Committee considered in all a number of cases and made grants to the amount of £332 7s. 4d.

AIR DEFENCE EXERCISES, 1934

The Air Defence Exercises will take place between Monday, July 23, and Friday, July 27, unless they are terminated earlier by Air-Marshal Sir Robert Brooke-Popham, Air Officer Commanding-in-Chief, Air Defence of Great Britain. Operations will begin each day at 6 p.m., and will terminate the next morning at 9 a.m. They will consist each day of three phases:—(a) Early evening phase, in which Day Bomber Squadrons will be mainly employed; (b) Night phase, in which multi-engined bombers will carry out raids; (c) Early morning phase, when Day Bombers will again be employed. The Fighter Units and the Ground Defence Organisation will be employed during all the phases, as ordered by the Air Officer Commanding the Defending Forces.

CENTRAL FLYING SCHOOL CATEGORIES

The undermentioned officers and airman pilots, who attended the Flying Instructors' Course at the Central Flying School from February 13th, 1934, to May 12th, 1934, have been categorised as follows:—

A.2:—F/O.s J. G. Glen and J. N. Jefferson.

B:—Flt. Lts. H. A. J. de S. Barrow, F/O.s L. H. Anderson, L. G. Belchem, J. P. Cecil-Wright, J. Constable-Roberts, E. Dawson, D. B. D. Field, T. B. Gleave, N. C. Hendrikz, H. W. Marlow, A. F. McKenna, H. W. Mermagen, H. Pilling, and P. J. Polglase, Sgts. H. Z. Foreman, A. R. Glading, and L. Jobbins.

C:—F/O.s G. R. Brice, I. A. Critchley, H. R. A. Edwards, R. L. Kippenberger, and T. J. MacDermot, Sgts. P. C. Cox, F. J. Chudley, and B. White.

The undermentioned officer of the Royal Australian Air Force also attended the course and attained a standard equivalent to "B":—
Flt. Lt. J. P. J. McCauley.

The undermentioned officers and airman pilots have been recategorised:—

A.2 to A.1:—Flt. Lts. R. F. Gandy and A. R. Combe, F/O. F. C. Cole.

B to A.2:—F/O.s L. W. C. Bower and E. C. Bates, Sgts. W. S. Lake, L. J. Dixon, and R. Middleton.

C to B:—F/O. H. F. Chester.

OFFICERS' PROMOTION EXAMINATIONS

The undermentioned officers were successful in the promotion examinations held on March 13 to 16, 1934.

PROMOTION EXAMINATION "B"

Flying Officers.—Ash, L. S. (R.A.F.O.), Baines, C. E. J., Barber, L. T. G., Barnett, R. J. W., Barrett, G. S., Bates, E. C., Bearne, G., Bird, I. C., Bower, L. W. C., Brew, J. K., Brighty, W. J., Brown, R. B., Button, A. H., Canning, P. E., Chiswell, L. E., *Christy, D. D., Coleman, G. B. S., Collins, H. M. B. (R.A.F.O.), Coope, W. E., Cooper, T. B., Dashper, R. B., Dawson, V. A., Donaldson, G. F. K., Douthwaite, D. J. (since deceased), Edwards, M. B., Egan, S. W. H., Elgey, E., Field, D. B. D., Gahan, H. M., Glenny, A. P., Grant, G. W. P., Harman, R. G., Harrison, R. B., Haynes, P., Heber, P. J., Higgins, C. G. (R.A.F.O.), Kippenberger, R. I., Kyle, W. H., Lees, R. B., Lowe, B. E., Luxmoore, A. N., Lynch-Staunton, D. M., Macdonald, D. M. T., More, J. W. C., Morris, D. G., Morrish, D. W., Nixon, G. E. B., Orr, L. F. H. (R.A.F.O.), *Pharazyn, W. F., Ratcliffe, W. T., Rees, T. J. (R.A.F.O.), Sadler, W. R., *Satterly, H. V., Scott, W. J., Seymour-Lucas, A. H., Sheen, W. C., *Shirley, T. U. C., Skinner, C. G., Smith, C. H., *Tatnall, J. B., Tester, J. A., Valentine, G. E., Walker, N. C., *Wallace, R. L., Wardell, F. A., White, G. R., Whitehead, J. B. T., Whitehead, J.

PROMOTION EXAMINATION "C"

Flight Lieutenants.—Bardon, H. R., Barrett, J. B., Barwell, P. R., *Beardsworth, G. B., Breakey, J. D., Croome, V., Dearth, E. C., Delamain, E. C., Eccles, R. Y., Ewens,

F. G. H., *Falkner, H. E., Hill, R. W., Huxham, G. H., James, A. F., King-Lewis, A., Kirk, F., Lovering, W. F., Pascoe, M. C., Reynolds, B. V., Ridgway, M. W. C., Stevens, C. H. A., Stringer, G. N. P. (R.A.F.O.), Tuttle, G. W., *Willetts, A. H., Woolley, F.

PROMOTION EXAMINATION "E"

Flying Officers.—Gaynor, G. J., *Howell, A. J., Pool, B. G., *Read, F. C., *Sudbury, H. A., *Wallace, R. W.

PROMOTION EXAMINATION "F"

Flight Lieutenants.—*Giblett, H. D., Ironmonger, J. J., Littlewood, W. St. J., Ludlow, F. B., Redman, A. J., Rich, R. T., Taylor, F. W., Tidy, C. E., Truss, J. E.

* Indicates those who have obtained 80 per cent. or more of the total marks and in whose records a special notation will be made.

LONDON GAZETTE

July 10, 1934

General Duties Branch

The follg. Acting Pilot Officers on probation are confirmed in rank and graded as Pilot Officers (June 6):—D. D. Atkinson, D. F. Baisdon, N. de W. Boulton, R. R. Gregory, F. C. Richardson, W. A. Theed, P. H. Gibbings, A. P. Hollick, E. M. Withy.

The follg. Acting Pilot Officers on probation are graded as Pilot Officers on probation:—F. D. Nugent (April 7); S. G. Birch (April 19); P. E. Meagher (June 6).

The follg. Pilot Officers are promoted to the rank of Flying Officer (June 17):—M. K. D. Porter, R. G. Coventry.

Wing. Com. L. M. Bailey, A.F.C., is placed on the half-pay list, scale A (June 27); Sqd. Ldr. C. H. C. Woolven, M.C., is restored to full pay from half-pay (June 22); Sqd. Ldr. R. M. Trevethan, M.C., is placed on the half-pay list, scale A (July 3); Com. H. L. St. J. Fancourt, R.N., Sqd. Ldr., R.A.F., ceases to be attached to the R.A.F. on return to Naval duty (June 2); Com. H. L. St. J. Fancourt, R.N., is reattached to the R.A.F. as a Sqd. Ldr., with effect from June 15 and with seny. of July 1, 1933, and ceases to be attached to the R.A.F. on return to Naval duty (June 16); Flt. Lt. P. J. Bett (Lt., Gordon Highlanders, R.A.R.O.) is transferred to the Reserve, class A (July 8); F/O. W. F. Hilchie is transferred to the Reserve, class A (April 11) (substituted for the notification in the *Gazette* of May 15); F/O. G. R. Moorby resigns his permanent commission (June 19).

Accountant Branch

Pilot Officer on probation G. L. Seabrook is confirmed in rank and promoted to the rank of Flying Officer (June 7).

Medical Branch

Flt. Lt. J. MacC. Kilpatrick, M.B., B.Ch., is promoted to the rank of Sqd. Ldr. (July 7).

Dental Branch

F/O. D. I. Malcomson, L.D.S., is promoted to the rank of Flt. Lt. (June 27).

PRINCESS MARY'S ROYAL AIR FORCE NURSING SERVICE

Sister Miss M. E. Sears is placed on the retired list (July 5).

ROYAL AIR FORCE RESERVE

Reserve of Air Force Officers

General Duties Branch

F/O. W. H. Bigg is promoted to the rank of Flt. Lt. (July 10).

The follg. Flying Officers are transferred from Class A to Class C:—H. C. Crooke (May 14); W. A. Campbell, H. Marsden (July 10).

F/O. A. G. Store is transferred from Class C to Class A.A.(ii.) (June 6); Flt. Lt. H. S. Robertson is transferred from Class A to Class C (June 3) (substituted for the notification in the *Gazette* of June 26).

The follg. Flying Officers relinquish their commissions on completion of service:—C. P. Vines (Jan. 17); J. S. J. Craigen (March 26).

F/O. J. T. Hall resigns his commission on appointment to a commission in the South African Air Force Reserve of Officers (Feb. 13, 1933).

AUXILIARY AIR FORCE

General Duties Branch

No. 607 (COUNTY OF DURHAM) (BOMBER) SQUADRON.—W. E. Gore is granted a commission as Pilot Officer (June 18).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Squadron Leaders.—J. G. S. Candy, D.F.C., to No. 99 (B) Squadron, Upper Heyford, 30.6.34. For flying duties vice S/Ldr. R. M. Trevethan, M.C. A. H. Wann to D.S.D., Dept. of C.A.S., Air Ministry, 2.7.34, vice S/Ldr. A. C. Bayley. C. T. Anderson, D.F.C., to D. of T., Dept. of A.M.P., Air Ministry, 2.7.34. F. L. Hopps, A.F.C., to Headquarters, Air Defence of Great Britain, Uxbridge, 5.7.34. For Navigation duties vice S/Ldr. P. E. Maitland, A.F.C.

Flight Lieutenants.—S. R. Groom, to Headquarters, R.A.F., Middle East, Cairo, 29.6.34. V. B. J. Jackson, to Headquarters, R.A.F., Middle East, Cairo, 29.6.34. D. L. Thomson, to No. 608 (N. Riding) (B) Squadron, Thornaby, 25.6.34. W. E. Dipple, to R.A.F. Depot, Uxbridge, 5.7.34. G. A. G. Johnston, to No. 26 (Army Co-operation) Squadron, Catterick, 5.7.34.

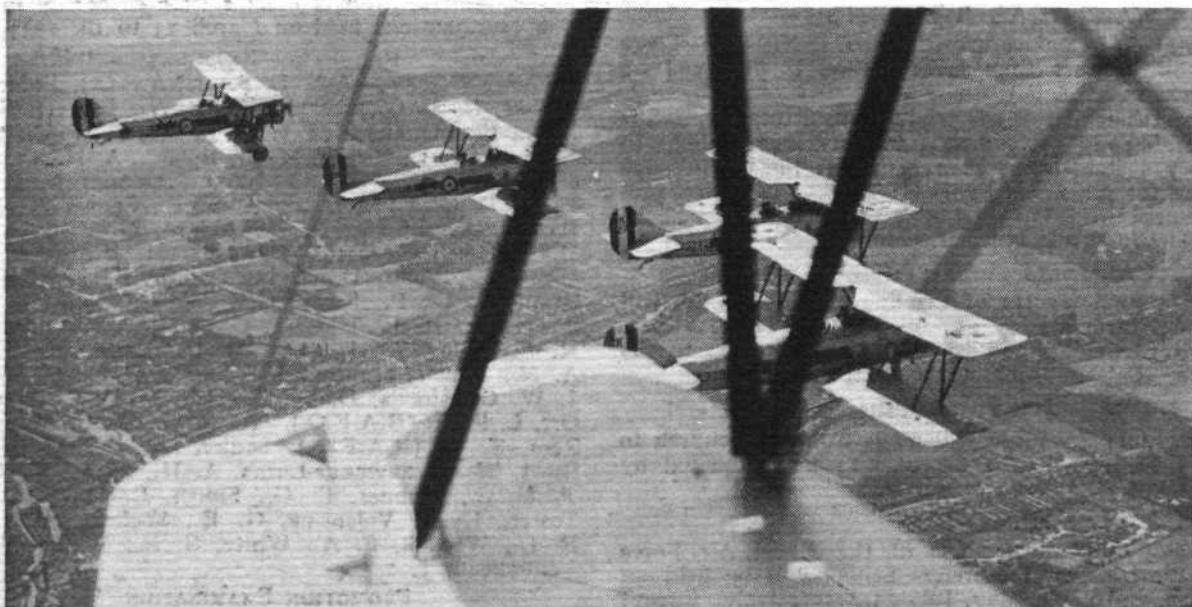
Flying Officers.—L. G. Belchem, to No. 3 Flying Training School,

Grantham, 3.7.34. G. W. Heather, to Station Headquarters, Ramleh, Egypt, 23.6.34.

Acting Pilot Officers.—D. D. Atkinson, to No. 45 (B) Squadron, Helwan, Egypt, 18.6.34. N. de W. Boulton, to No. 216 (B.T.) Squadron, Heliopolis, Egypt, 18.6.34. P. H. Gibbings, to No. 47 (B) Squadron, Khartoum, Egypt, 20.6.34. R. R. Gregory, to No. 8 (B) Squadron, Aden, 21.6.34. A. P. Hollick, to No. 14 (B) Squadron, Amman, Palestine, 18.6.34. W. O. Jones, to No. 2 Armoured Car Company, Ramleh, Egypt, 5.7.34. F. C. Richardson, to No. 216 (B.T.) Squadron, Heliopolis, Egypt, 18.6.34. W. A. Theed, to No. 6 (B) Squadron, Ismailia, Egypt, 18.6.34. E. M. Withy, to No. 6 (B) Squadron, Ismailia, Egypt, 18.6.34.

Medical Branch

Flight Lieutenants.—J. Hutchieson, to Station Headquarters, Upper Heyford, 2.7.34. F. E. Lipscomb, to Princess Mary's R.A.F. Hospital, Halton, 2.7.34. J. Magner, to Home Aircraft Depot, Henlow, 2.7.34. J. F. S. Wiseman, to Station Headquarters, Tangmere, 5.7.34.



OXFORD UNIVERSITY AIR SQUADRON: A formation of "Tutors" over Canterbury. The squadron is doing its annual training at Eastchurch.

THE INDUSTRY

KING'S CUP "INDUSTRY" SUCCESSES

ITEMS which played their part in bringing Flt. Lieut. Schofield's Monospar S.T.10 (two Pobjoy "Niagaras") to victory in the King's Cup Race included Shell Aviation petrol, Aeroshell "Heavy" oil, B.T.H. magnetos, Claudel-Hobson carburettors, K.L.G. plugs, Brico piston rings, Hiduminium and Magnesium castings, Smith's instruments, and wooden airscrews manufactured by the Airscrew Co. The under-carriage shock-absorber legs were made by Aircraft Components, and the tyres and brakes were Palmers. Tecalemit greasers were used on the under-carriage. Cellon dope for the fabric and Rumbold upholstery in the cabin gave the machine a most attractive appearance. An Air Log and Reid & Sigrist turn and bank indicator were fitted.

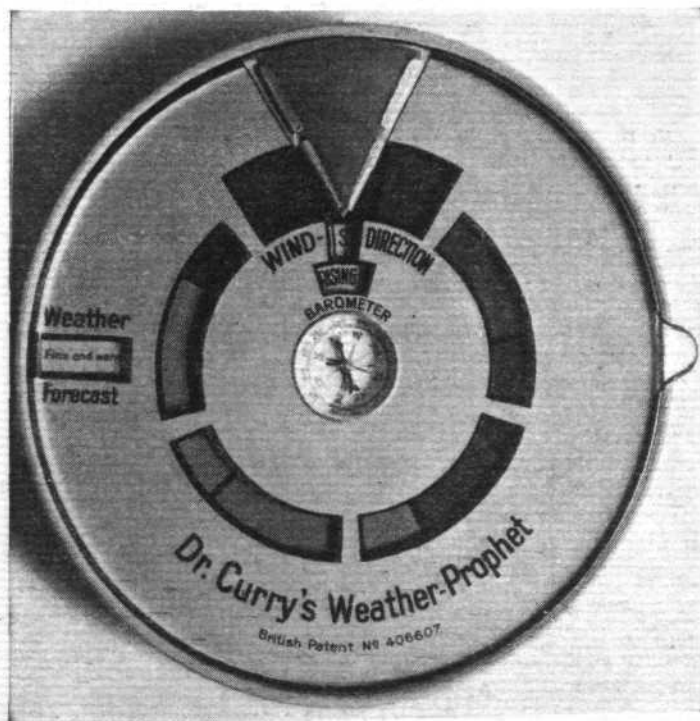
"Tommy" Rose's mount, the Miles "Hawk Major" ("Gipsy Major"), used standard National Benzole mixture similar to that which can be obtained from any "National" pump, Castrol oil, B.T.H. magnetos and Claudel-Hobson carburettors. Finished with a special Titanine doping scheme, the appearance of this machine attracted much favourable comment. In his "Gipsy III" engined "Moth," Mr. Lipton, who came third and won the Siddeley Trophy, used Prattis Stanavo petrol, Castrol oil, B.T.H. magnetos and Lodge plugs. For the fourth consecutive year every engine entered for the King's Cup Race used Hoffman ball or roller bearings.

The Pobjoy engines of the winning Monospar used reduction gears manufactured by the Power Plant Co., Ltd.

A WEATHER PROPHET

DR. MANFRED CURRY, known to many of our readers as the author of the books "Wind and Water" (and of the film of the same name), "Aerodynamite," "Racing Tactics," and "Beauty of Flight," has constructed a novel instrument by means of which, it is claimed, the weather can be foretold with the greatest possible certainty. This invention has been brought into being with the co-operation of the leading meteorological stations at home and abroad.

Whereas the barometer comprises only one factor, that of the atmospheric pressure, Curry's Weather-Prophet bases its forecast on two factors—the atmospheric moisture and the direction of the wind. The hygrometer—a chemical material, indicates the degree of moisture in the air by change of colour. Each of five colour grades corresponds to a change of about 20 per cent. in the degree of moisture in the air. Of the five comparison colours, blue, for instance, denotes an atmospheric degree of humidity of 0-20 per cent., and bright red one of 80-100 per cent. Further, a compass is provided, by means of which the direction of the wind may be ascertained.



A POCKET WEATHER FORECASTER: Dr. Manfred Curry's "Weather-Prophet," described above.

The chemical indicator is affected some eight to fifteen hours before a change of weather sets in. By this means the weather for the next day may be forecast. In using the instrument the dial should be turned until the colour of the indicator matches approximately that on the disc below. Secondly, the direction of the wind should be ascertained. Next the dial should be turned with the indicator within the range of the comparison colour until the direction of the wind appears at the small window on the disc. If the wind is so slight that its direction cannot be determined, the point of the indicator should be set on East in the case of fine weather, or West in the case of bad weather. The weather forecast may then be read in the window on the left of the dial. Instead of "rain," "snow" should be read in winter, and "fog" in autumn and spring.

The most reliable results are obtained when the Weather-Prophet is placed in a well-ventilated room or at an open window. In summer the instrument may be kept in the open air. In this case, however, it reacts to the humidity of the night, and should not be read early in the morning. The instrument cannot be used in a heated room, and must not be exposed to the direct rays of the sun. At present the instrument is not yet on the market, but will shortly be sold by opticians at a very moderate price, and the agent in London is W. B. Unland, 72, Leadenhall Street, London, E.C.3.

"ROBOT" SAFETY SWITCH

RISK of fire resulting from a crash is minimised by a new device, the invention of Capt. H. N. Salmond, C.I.E.R.I.M. (Retd.), which cuts off automatically the current to the ignition and lighting circuits. The "Graviner" Safety Switch, as the device is known, may be fitted to cars and aeroplanes. In the event of the overturning of a car, or violent impact, the switch cuts off the supply from the dynamo and battery and switches off the magneto, if fitted. The wires are thus dead and cannot spark. Moreover, the engine is at once stopped and the possible discharge of hot, flaming exhaust gases into petrol-laden atmosphere is avoided. The device is known as the "Graviner" Safety Switch because its contacts are controlled by a pendulum which works according to gravity in the case of overturning, and inertia in the case of impact. Bumps and slight impacts cause the pendulum to swing, but not sufficiently to make a change in the circuit. A violent collision, however, causes the release of the switch contacts. In the case of the car tilting to an angle of 45 deg. the force of gravity has the same effect.

For use in aircraft a modification is introduced to restrict the movement of the pendulum so that the switch operates only in the event of a crash or overturning on the ground and not during aerobatics. The device is contained in a steel box measuring $3\frac{1}{2} \times 3\frac{1}{2} \times 4$ in. It is being manufactured by Siemens Bros. at their Woolwich Works at the rate of 200 a week for use in cars. The price is £3 3s. Tests are being made at the Royal Aircraft Establishment, Farnborough.

BRITISH MATERIAL ABROAD

LAST year the Air Log Co., Ltd., despatched two "Air Logs" to Bucarest for fitment to two machines of an experimental squadron of the Roumanian Air Force. Some six months later the company were informed that the instruments had functioned perfectly for more than 650 flying hours, and this was followed by a letter from the Directeur Technique of the Sous-Secrétariat D'Etat De L'Air stating that they were pleased with the performance of the instruments, and were placing a trial order for fifty. These, it is understood, will be fitted to fifty machines recently delivered by the National Aircraft Factory (P.Z.L.) of Warsaw.

STAFF CHANGES

AMONG recent interesting changes in the staffs of well-known aviation companies we learn that Capt. P. D. Acland will in future represent the Westland Aircraft Co., with office in Bush House, London W.C.2 (Temple Bar 2101). Major W. G. McMinnie has resigned his position with Armstrong Siddeley Motors, Ltd. Grp. Capt. R. J. Barton has resigned his chairmanship of the board of Pobjoy Airmotors, Ltd., and Short Bros. will be represented on that board in future. Mr. H. D. Boulbee, lately designer to British Klemm Aeroplane Co., Ltd., has also taken a position with Pobjoys.

Mr. A. H. Caple has resigned his position with the Cirrus-Hermes Engineering Co., Ltd., and joined General Aircraft, Ltd.

STAINLESS STEEL COMPANIES' AGREEMENT

IT has been announced that Thos. Firth and John Brown, Ltd., and the English Steel Corporation, Ltd., have entered into a preliminary agreement for the formation of a new company to acquire, as from October 1, 1934, their respective businesses as producers of stainless and Staybrite steels. The consent of the debenture stockholders of Thos. Firth and John Brown, Ltd., will be required for this agreement. The name of the new company will be Firth-Vickers Stainless Steels, Ltd. Thos. Firth and John Brown, Ltd., and the English Steel Corporation will each hold one-half of the subscribed capital. Appointment of the board of the new company will be made by the two parent companies. Mr. A. J. Grant will be the first chairman. Only stainless and Staybrite steels will be affected by the new arrangement.



THEIR NEW HOME: An aerial view of the new factory of Reid and Sigrist, Ltd. at New Malden, Shannon Corner, Kingston By-pass. Here their well-known Turn Indicator is produced and in addition there is a modern plant for anodising and plating in Cadmium, nickel or chromium. (Flight Photo.)

A NEW FAIREY DIRECTOR

FLIGHT LIEUT. L. M. HILTON has been made a director of the Fairey Aviation Co., Ltd. Flight Lieut. Hilton joined the R.N.A.S. in 1917, and was with the Grand Fleet, and later with the Russian Relief Force. After the War he was granted a permanent commission in the R.A.F., and served with the Fleet Air Arm and Coastal Area. He resigned his commission to join the Fairey Aviation Co. in 1931.

LUXOR "TWELVE" GOGGLE

INCORPORATING many highly desirable features, including extra large flat safety glass lens, 2 x 3 1/4 in. (white or tinted), airstream ventilation, adjustable bridge and sorbo cushions which fit the contour of the face, the new Luxor "Twelve" goggle is priced at 25s. It is claimed that there is no air seepage, no distortion, and no fog lens.

MARCONI AIRCRAFT SERVICE DEPOTS

A NEW Marconi aircraft service depot, under the charge of Mr. E. L. T. Bartam, was opened on Tuesday, June 19, at Speke Aerodrome, Liverpool. The opening of this new depot is in accordance with the company's policy of providing efficient local service for users of Marconi aircraft equipment, other depots having been opened at Romford and Heston. The company's principal service depot remains at Croydon.

R.F.D. COMPANY

THE R.F.D. Company, of 17, Stoke Road, Guildford, Surrey, has been made into a limited company. There is little difference in the constitution of the company, Mr. R. F. Dagnall being the governing director. Mr. R. C. Quilter has been appointed a director. The company intends to manufacture all types of life-saving equipment for use in aircraft.

THE "JUPITER" IN INDIA

CAPT. C. D. BARNARD, who has just returned from his tour of India, where some ninety-two air displays were given in various parts of the country, has informed the Bristol Aeroplane Co., Ltd., that during the tour the "Jupiter" engine fitted in his Fokker monoplane, *The Spider*, behaved perfectly, and was not touched throughout, with the exception of general routine. In the course of the tour *The Spider* carried 9,241 passengers and covered a distance of approximately 20,000 miles.

Irish-built Monoplane Tested

Designed and built by Mr. Joseph Gilmore, a civilian ground engineer employed by the Irish Free State Army Air Corps, a high-wing monoplane of conventional design made its first successful flights at Baldonnel aerodrome, County Dublin, last week. The machine has a "Genet II" engine with a wooden airscrew, giving a top speed of approximately 100 m.p.h., and a cruising speed of 85 m.p.h., with a range of 380 miles. The landing speed is approximately 50 m.p.h. Air and wheel brakes are fitted, and the cabin is designed to permit easy egress from the second seat, as Mr. Gilmore proposes to use the machine for parachute drops. During tests the machine took off in sixty yards, and it is to be submitted for its Certificate of Airworthiness this week.

Ownership

Below are the British ownership figures provided by Lloyd's and the British Corporation Registers:—

Private	528
Agents	73
Constructors	129
Clubs	95
Others (non-classified)	3
Business (other than aviation)	38
Aerial Work	4
Taxis, Schools and Joy-riding	292
Imperial Airways, Limited	38
National Flying Services, Limited	12

1207

Of these, 38 are of foreign manufacture.

PUBLICATIONS RECEIVED

Air Liner. By Charles Lorne. Price 7s 6d. net. London: John Lane, The Bodley Head Ltd.

Copper Tubing.—Copper Development Association, Thames House, Millbank, S.W.1.

NEW COMPANIES REGISTERED

ROTOR PLANE COMPANY, LTD., 53, Chancery Lane, W.C.2. Capital, £21,000 in 20,000 preferred ordinary shares of £1 and 20,000 deferred ordinary of 1s. each. To carry on the business of manufacturers, inventors, designers and patentees of, agents for and dealers in aeroplanes, flying machines, airships, balloons, aeronautical apparatus, etc. The first directors are: Alfred G. Ockenden (permanent managing director), 10, Midholme, Wembley Park, Middlesex. Alfred G. Huggins, C.M.G., D.S.O., 91c, Lexham Gardens, W.8. Secretary: C. Aubrey Smith. Solicitors: Albert J. Larcombe, 53, Chancery Lane, W.C.2.

AIR DISPATCH LIMITED, Air Port of London, Croydon. Nominal capital, £100 in £1 shares. Objects are to buy, sell, import, export, manufacture, supply, deal and trade in aeroplanes, seaplanes and aircraft of all descriptions; to carry on the business of transport contractors and carriers by aeroplane or any other means of transport of newspapers, merchandise and articles of every description, etc. The first directors (to number not less than 2 nor more than 5), are: The Hon. Mrs. Victor Bruce, Mole Cottage, Cobham, aviatrix (permanent managing director). Flight-Lieut. Harold Thomas, Andals, Manor Way, Petts Wood, Kent (director Provincial Airways, Ltd.). Solicitor: G. B. Gush, 86, Rochester Row, S.W.1.

CHANGES OF NAME

WILSONS & LANGLEY, LTD. (Mfrs. of engines, aeroplanes, motor cars, etc., 49, Bromham Road, Bedford). Name changed to George Langley, Ltd., on June 21 1934.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.e. = internal combustion; m. = motors. (The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

APPLIED FOR IN 1932

Published July 19, 1934

- 36,307. VICKERS (AVIATION), LTD., and B. N. WALLIS. Construction of wings for aircraft. (412,232.)
- 36,489 A. HILLIER. (Sperry Gyroscope Co. Inc.) Apparatus for locating sound sources, particularly travelling aircraft. (412,267.)

APPLIED FOR IN 1933

Published July 19, 1934

- 508 IMPERIAL AIRWAYS, LTD., G. E. WOODS-HUMPHREY, and H. L. HALL. Sparking-plugs for internal-combustion engines. (412,294.)
- 22,350. J. AIVAZ. Aerial propellers with variable pitch. (412,434.)
- 32,942. C. DORNIER. Aircraft of the helicopter type. (412,487.)